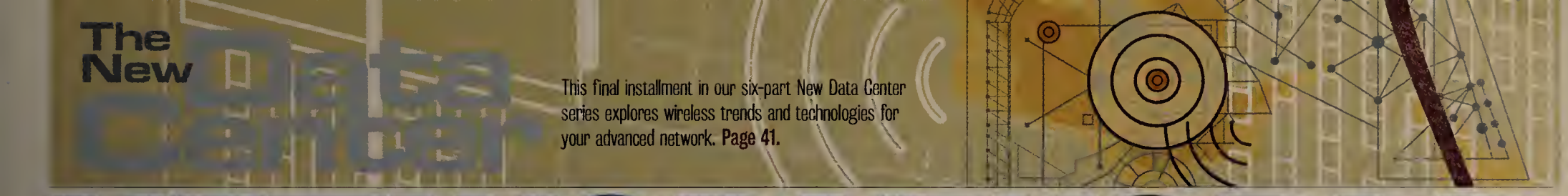


This final installment in our six-part New Data Center series explores wireless trends and technologies for your advanced network. **Page 41.**

NETWORKWORLD

The leader in network knowledge ■ www.networkworld.com

October 23, 2006 ■ Volume 23, Number 41

Which is the bogus box?

Which package contains a counterfeit Cisco voice interface card? **Find the answer on page 35.**

Fake network gear can be hard to spot

Counterfeit network gear has popped up in the channel and could be in your organization.

BY DEB RADCLIFF

Subnets began dropping off the MortgageIT network one after another. Entire bank branches went offline for days as Joe Bruner, network engineering manager at the time, scrambled to purchase and install replacement parts.

At first, he figured some of the new WAN interface cards (WIC) he recently installed to upgrade 50 Cisco 2811 routers during expansion and reorganization were faulty.

But as more routers failed and dropped off the network, Bruner realized he was dealing with fakes.

Thirty cards turned out to be counterfeit, he says. Despite repeated calls and e-mails to his supplier, Atec Group, the issue was not resolved.

Nor did he get an answer to the most important question: How did a registered Cisco reseller (also a platinum Network Appliance partner and gold partner to Microsoft and Symantec) acquire the counterfeit WICs in the first place?

See Counterfeit, page 34

Cisco looks to push high-end IP video

BY PHIL HOCHMUTH

Cisco this week is expected to launch its long-anticipated video communications technology — a combination of life-size displays and high-definition IP video designed to let customers replace in-person meetings with long-distance virtual powwows.

With the technology costing $250,000 a room and requiring 15Mbps of bandwidth, however, it remains to be seen whether only the largest companies have the budgets and capacity to embrace it. Some industry watchers say telepresence products will never get beyond being a niche IT luxury for a rarified group of executives. Plus, Cisco is entering the market almost 12 months behind other telepresence competitors such as HP, which already has claimed customers PepsiCo, Dreamworks and chipmaker Advanced Micro Devices.

Cisco CEO John Chambers has hinted about the company's telepresence effort over the last nine months in interviews and at industry events.

"Video communications is the most effective way to communicate," he said at the Interop Conference in Las Vegas in May. "If you ask me what excites me the most . . . I'll say it's telepresence — the ability to interface with customers [all around the world] in a way that's not just about videoconferencing."

He is excited specifically about the Cisco TelePresence 1000 and TelePresence 3000 systems,

See Cisco, page 16

Mark Canepa

Extreme CEO on hot seat

- How he plans to attack competitors Cisco, Nortel and others.
- The company's wireless strategy.
- How he'll set advanced switching directions. **Page 12.**

Cisco launches unified network access client. **Page 12.**

Security start-ups to watch

These 10 companies are taking on the industry giants.

BY CARA GARRETSON AND ELLEN MESSMER

These are tricky times for enterprise security start-ups.

Breaking into this vast and diverse technology market means more than just having a good product; newcomers need to bring revolutionary technology, an elegant resolution to a vexing problem, an offering that integrates unusually well with the world around it — something to distinguish it from the crowd. At the same time, security is such a strategic issue for enterprises that few are willing to put their money behind a young company that doesn't already have a few Fortune 500 entries on its customer list.

"In security, you want to be the best. There aren't many customers out there that will brag they have the second-best security solution," says Mark Levine, managing director with Core Capital in Washington, D.C.

Security start-ups also are challenged by the existence of a few behemoths — including Symantec, McAfee and Trend Micro — that dominate the market and often eclipse best-of-breed, point solutions with the promise of one-stop shopping for multiple security needs (www.nwdocfinder.com/5728).

In addition to start-ups with revolutionary technology, some young companies are turning heads because security is at the heart of their products even though the function of the products is to perform something unrelated.

"We didn't view this as an investment in a security

See Security, page 24

IBM

_INFRASTRUCTURE LOG

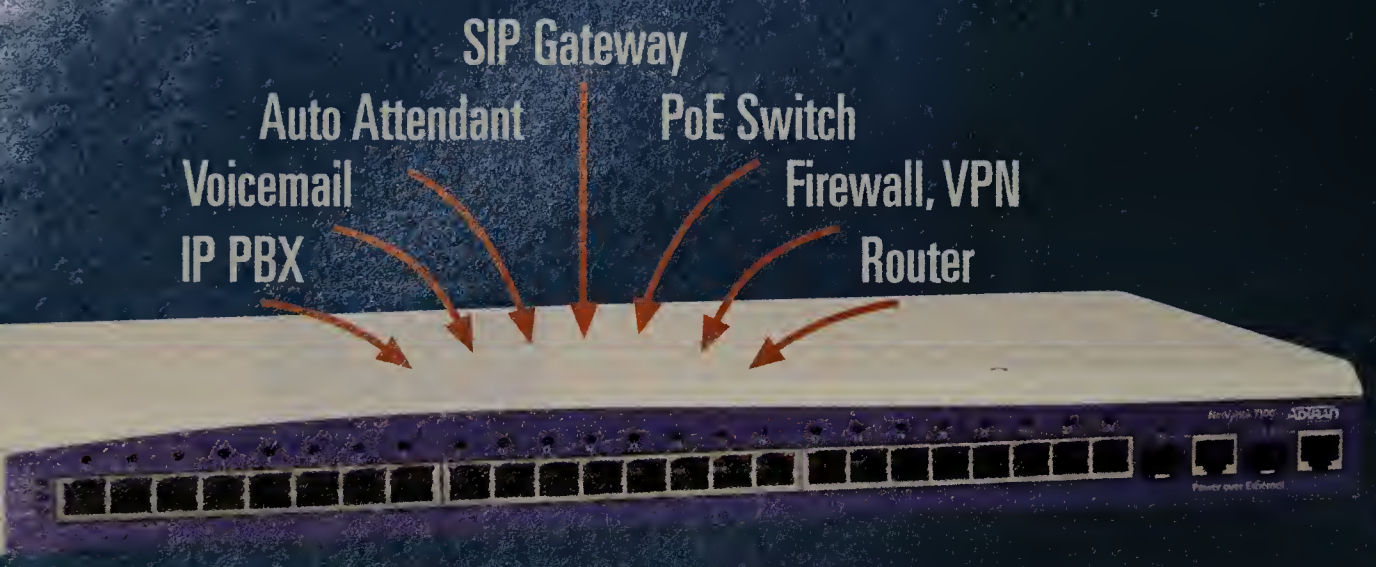
_DAY 25: They're in the cafeteria!! AAAGGGHHH!! These useless things can't work with each other. They aren't scalable. They aren't responsive. And you can't adjust new capacity on the fly. The horror.

_So many of them, I have to eat standing up. My arches are killing me. And I got avocado on my shirt.

_DAY 26: The answer: IBM BladeCenter® with Dual-Core Intel® Xeon® Processors to boost performance and balance workloads. Its self-automating features make it easy to manage, and it has more blades per chassis for a smaller footprint. The BladeCenter even opened up its specs, so the things we buy today can work with the things we buy tomorrow.

_I can eat my turkey-avocado sandwiches in peace again. Mmmmm...

IBM.COM/**TAKEBACKCONTROL**/BLADE



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COOLTOOLS

T-Mobile teams with designer Diane von Furstenburg for a fashionable Sidekick. Page 30.

Features

Watch out for fake network equipment

Counterfeit gear has popped up in the channel and could find its way to your LAN. **Page 1.**

■ Small dots on the surface of this fake WAN interface card simulate the texture of an authentic card.

NETWORKWORLD CLEAR CHOICE

Clear Choice Test:

WideBand's managed Ethernet switch is fast and affordable. **Page 37.**

The New Data Center

This final installment in our six-part New Data Center series explores wireless trends for your advanced network. Coverage includes a look at six hot apps and cool tools, challenges of integrating the wireless with the wired, and how McDonald's is serving up hot apps over Wi-Fi. **These stories, plus more, begin on page 41.**

Newsbits

Microsoft says reported IE 7 bug not in browser

■ A flaw that research firm Secunia said it discovered in Internet Explorer 7 just hours after its unveiling is not a browser bug after all, Microsoft said last week. Instead, the problem lies in a component of Microsoft's Outlook Express e-mail client, which can be triggered by the browser. The flaw could be used in phishing attacks to read sensitive information from the Internet Explorer browser, Secunia said. The security firm reported the problem with the Internet Explorer 6 browser in April and found that it could be reproduced on Internet Explorer 7. Secunia does not consider the problem to be critical, but it was widely reported because its discovery came so soon after Internet Explorer 7's launch. "These reports are technically inaccurate," wrote Christopher Budd, a security program manager with Microsoft, in a blog posting. "The issue concerned in these reports is not in Internet Explorer 7 (or any other version) at all."

FBI says ISPs should keep records longer

■ ISPs may be under further pressure to provide the government with customer information. FBI Director Robert Mueller last week said he wants ISPs to hold on to customer data — which typically is deleted within a few months — to help law enforcement. The federal government says this customer information could help the government track down possible terrorist threats, as well as find other criminals, such as online predators. "Today, terrorists coordinate their plans cloaked in the anonymity of the Internet, as do violent sexual predators prowling chat rooms," Mueller said in a speech to the International Association of Chiefs of Police in Boston. "According to our Cyber Division, nearly one out of three computer users has experienced some type of negative incident. All too often, we find that before we can catch these offenders, [ISPs] have unwittingly deleted the very records that would help us identify these offenders and protect future victims." Industry watchers believe the FBI's request will fuel arguments over privacy and infringements on civil liberties.

New Trojan horse lures e-mail users with photos

■ Researchers at IT security vendor

See News Briefs, page 6

■ **CONTACT US** Network World, 118 Turnpike Road, Southborough, MA 01772; **Phone:** (508) 460-3333; **Fax:** (508) 490-6438; **E-mail:** nwnews@nww.com; **STAFF:** See the masthead on page 16 for more contact information. **REPRINTS:** (717) 399-1900

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Newsbits

News Briefs

continued from page 5

Sophos last week warned of a new spyware Trojan horse that promises racy pictures of the teenage Russian pop group t.A.T.u. as a means to entice e-mail users to click on a malicious attachment. The Banito-BE Trojan horse, according to Sophos, has been spammed out to e-mail addresses worldwide promising intimate information on the duo, best known for their schoolgirl outfits and sexually charged performances. The e-mail has three files attached, one of which could give hackers access to PCs, Sophos says. TATU.CHM is a malicious compressed HTML help file, which offers an album of images but also opens up the PC to malicious activity. Sophos says the potential harm of such files includes data and ultimately financial theft. To avoid infection, e-mail users should not click on the attachment and IT departments should implement e-mail gateways to protect their PCs in a consolidated manner, Sophos recommends.

Harvard takes Blue Gene to heart

■ IBM last week announced that Harvard University is using an IBM Blue Gene supercomputer, which holds the title as the fastest supercomputer in the world, to support research into the human heart and circulatory system. Harvard's Division of Engineering and Applied Sciences is deploying a Blue Gene System that includes 4,096 PowerPC processors in two racks, covering an area of less than 32 square feet. IBM says the system uses four times less space and five times less power than a traditional cluster providing equivalent processing power. The deployment is the largest Blue Gene system in academia, IBM says. A larger version is running at the Lawrence Livermore National Laboratory and is ranked as the fastest supercomputer in the world. The system at Harvard is called the CrimsonGridBGL and is an expansion of the Crimson Grid, which is a more traditional computing grid that IBM deployed at Harvard in 2003.

Oracle finally taking Linux plunge?

■ Reports are swirling again that Oracle wants to get cozier with Linux and at least one financial analyst says customers can expect a tighter Linux-based appliance from the database and application vendor by the end of the month. Industry experts say such a move would be good news for small and midsize customers, who would be the likely target of preconfigured Ubuntu Linux-based packages from Oracle. Ubuntu, a European-based Linux distribution firm, has gained widespread popularity on the desktop and released a server version earlier this year and is rumored to be working with Oracle. Neither Oracle nor Ubuntu could be reached for comment. In May, Ubuntu announced that its server version would support Sun's UltraSparc T1 systems. Support for Oracle applications would help push Ubuntu into more enterprise data centers, analysts say. "We have heard that Ubuntu is currently working to certify its recently introduced server [operating system] to all of Oracle's major products, including database and middleware," writes Katherine Egbert, an analyst at Jefferies & Company, in a research note on Red Hat issued last Friday. The move, Egbert says, "is perhaps the fallout from an attempt by Red Hat and Oracle to work more closely together."

IT spending down

■ Forrester Research projects U.S. IT spending in 2006 to fall short of previous expectations and next year's results to be even weaker. Forrester, which bases its spending forecasts partly on data distributed by the U.S. Department of Commerce, reports that adjusted spending figures from the government for 2004 and 2005 investments have forced Forrester to lower its expectations for spending. For instance, the Commerce Department lowered its figures on investment in overall IT by $35 billion in 2005 and $15 billion in 2004. Plus, slowdowns in spending among leading global IT vendors through this year's first two quarters — another measure Forrester uses to project overall spending — indicate a spending stall going forward.

{quote of the week}

"We think spear phishing attacks will become more prevalent as phishers are more able to harvest publicly available information to personalize each attack. . . .This kind of attack will be more dangerous than what we're seeing today."

Jacob Ratkiewicz, University of Indiana researcher

See story at www.nwdocfinder.com/5781

Spamhaus keeps domain name

■ A U.S. judge has denied an order that would have suspended the domain name for The Spamhaus Project, averting a potential quagmire over how U.S. legal rulings apply across the global Internet. Spamhaus, a group of computer security experts based in London, creates a database used by security vendors to block unsolicited bulk e-mail. Last month, an e-mail marketing company, e360 Insight, won an $11.7 million judgment against Spamhaus in U.S. District Court, Northern District of Illinois. The ruling also called for Spamhaus to remove e360 from its blacklists. Spamhaus, which has been sued in the United States several times, typically ignores the rulings. It says U.S. courts do not have jurisdiction over it because the group is based in the United Kingdom. Spamhaus maintains that e360's e-mail constitutes spam and violates U.K. law. The U.S. lawsuits against Spamhaus typically end there, but earlier this month e360 raised the stakes. On Oct. 6 it asked the U.S. court to force the Internet Corporation for Assigned Names and Numbers and Spamhaus' domain registrar, Tucows, to suspend its domain name.

Study: State e-recycling wasteful

■ The lack of a nationwide e-waste program in the United States will cost taxpayers millions of dollars as states duplicate efforts, according to a study released last week. Four states that have begun e-waste programs to recycle electronic equipment will generate $25 million a year in "dead weight" costs such as redundant program administration, enforcing manufacturer and retailer compliance, and excluding out-of-state waste from the state's program, said the study by the National Electronics Recycling Infrastructure Clearinghouse. Electronics manufacturers and retailers would pay $11.4 million of those costs, while state governments would pay $4.4 million. California, Maryland and Maine have begun recycling computer hardware and other electronics equipment, and Washington is scheduled to implement a program by January 2009. If 20 states adopt e-waste programs, the redundant cost to taxpayers would be $125 million a year.

TheGoodTheBadTheUgly

< The greatest wireless device of them all. Say happy 50th anniversary to the remote control, which Zenith introduced as the Space Command in 1956. Robert Adler led a team that developed the ultrasonic device.

EMC layoffs loom. Even as EMC expands beyond network storage technology into security, virtualization and content management, it is preparing to cut as many as 1,250 jobs in the wake of 21 acquisitions made over the past three years. The company's workforce has grown from 17,500 to 31,000 during that time. Middle managers will be targeted, but R&D and customer-facing positions will be largely spared, the company says.

At last, an honest vendor. We got a pitch last week inviting us to speak to the president of a previously secretive business intelligence software company emerging from "steal mode." Yeah, we know what they meant, but it's still funny.

"I'm sorry, sir, we've sold out of this model, but I can sell you the demo model for a third of the price. The downside is it's 100 times the size."

Ron Eck wins our latest Weekly Caption Contest. Join us each Monday for the start of a new round. www.networkworld.com/weblogs/layer8

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PEERSAY

From our online forums

Overspending on IT? Gartner predicts IT will overspend by billions of dollars on software and equipment over the next few years. One NetworkWorld.com user wonders who will come out with a survey showing how IT is overspending on consultants: "Networking equipment companies create new technology so IT will purchase it. Gartner's motivations are not more nobler, they are in it for a profit as well. The bottom line is Gartner is throwing out a sensational headline to get attention to their consulting and research services." Your thoughts?
www.nwdocfinder.com/5752

Halloween costume contest winner. The verdict is in and we have a winner. Check out his fancy duds.
www.nwdocfinder.com/5753

Carriers and spam. Columnist Daniel Briere wrote recently that carriers should be doing more to stop spam. User huntington6, however, finds that a slippery slope: "Once we hand the content-censor baton to ISPs, why stop them at e-mail content? What about all that other trashy content, over on the Web and usenet sides, as well? I share Mr. Briere's dislike for spam. But, absent a benevolent, fair-minded censor, I'd fear us going there.
www.nwdocfinder.com/5754

Apple's virus-laden iPods. User Ron is amused to read that Apple blames Windows vulnerabilities for a virus on a small number of new iPods: "So does this mean that if iPod were not Windows compatible they would have left it on there because it doesn't affect Macs? Very cheap shot of them to try to blame Windows for a product they didn't properly test." **www.nwdocfinder.com/5755**

McDonald's spyware-laden MP3 players. Ron is also amused by a report that McDonald's in Japan gave away MP3 players infected with spyware.
www.nwdocfinder.com/5756

BLOGOSPHERE

Accessible Web sites

Plus: A report on Ms. Dewey, and is the soup at its boiling point?

Accessible Web sites. On her Tech Exec blog, columnist Linda Musthaler discusses ways to make Web sites readable by people with visual handicaps — and why it matters. She quotes from a reader who tells her, "Doing the right thing in spite of splitting hairs with what is law and what is not is the right way to go."
www.nwdocfinder.com/5764

Sassy search. On Compendium, Executive Editor Adam Gaffin reports on Ms. Dewey, a Flash-based search engine that lets you interact with a sultry search siren sitting in a Max Headroom-like environment: "If you call her up and then don't actually ask her anything, she'll get impatient and bend over her counter and rap on your monitor screen, or just pout, or plead with you to ask her something so she can learn more and take over the world. Or something. When you finally break down and do ask her a question, she's actually pretty slow in getting results, but you might not care (for added fun, ask her to take her clothes off)."
www.nwdocfinder.com/5765

Too many cooks spoil the hot soup? On Buzzblog, Paul McNamara wonders about hot soup.com, which promises to provide a forum for people such as Bill and Hillary Clinton, Lance Armstrong and Jon Bon Jovi: "Based on what I've read about the enterprise, it seems like MySpace meets Wikipedia meets The Huffington Post meets Free Republic meets Digg: This isn't a mashup, it's more like a train wreck waiting to happen — at least sight-unseen."
www.nwdocfinder.com/5766

The next Google killer? The Alpha Doggs sniff out a new search engine, called Powerset, that uses natural-language search queries. (So, sort of like Ask Jeeves once promised, only better?)
www.nwdocfinder.com/5767

IT VIDEO *Hot Seat interviews, the coolest tools, and more*

Hot Seat: Rogue squadron. Mazu CEO Paul Brady talks with John Gallant about internal security methods that go beyond firewalls and intrusion-prevention systems.
www.nwdocfinder.com/5776

Cool Tools: Makin' copies. Keith Shaw impresses the marketing department with the Bravo SE Disc Publisher from Primera, which quickly duplicates and prints multiple copies of CD or DVD content.
www.nwdocfinder.com/5775

Twisted Pair: Podcast. Jason Meserve and Keith Shaw chat about several Microsoft security issues and whether IT managers are better off at small or large companies, and try to diagnose the symptoms of Internet addiction.
www.nwdocfinder.com/5777

ASK THE HELPDESK *Find the answers to these prickly problems online.*

This week: Building a wireless network inside a steel cage.

Help desk guru Ron Nutter helps a user build a wireless network inside a steel cage.
Help Desk response:
www.nwdocfinder.com/5757

Analyst Robin Gareiss explains the need for chief branch officers.
Help Desk response:
www.nwdocfinder.com/5758

Security newsletter writer M.E. Kabay shows how to ferret out image forgeries.
Help Desk response:
www.nwdocfinder.com/5759

Storage newsletter writer Mike Karp examines the need for protective software for legal issues. **Help Desk response:**
www.nwdocfinder.com/5760

BEST OF NW'S NEWSLETTERS

Ping and Tracert: We lose, the hackers win

Plus: What NetWare users hate about Linux.

Wide-area networking: Ping is a command that was designed — and used for many years — to confirm communication with and/or round-trip latency to an IP address or URL, but because of hackers exploiting the command to launch denial of service attacks, ping is useless as a management tool. The same with tracert. Analysts Steve Taylor and Larry Hettick explain.
www.nwdocfinder.com/5768

Wireless in the enterprise: For optimum security and scalability, it's desirable to automate the process of disabling rogue Wi-Fi devices discovered by your wireless intrusion detection/prevention system. However, you also must avoid unlawful disruption of other operators' Wi-Fi networks. Newsletter author Joanie Wexler discusses how striking a balance can be tricky.
www.nwdocfinder.com/5769

Service provider news report: How much business is your Web site losing to cybersquatters, typos, logo misuse and other online threats? VeriSign says it can help companies find, prioritize and resolve these threats quicker with a new service. Senior Editor Carolyn Duffy Marsan reports.
www.nwdocfinder.com/5770

Novell NetWare tips: Novell NetWare Tips newsletter reader krazy kiwi wrote to author Dave Kearns with 10 reasons why Linux may not be the favorite operating system of the NetWare fan base.
www.nwdocfinder.com/5771

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The World According To Stephen

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The new at&t

EMC to roll out virtual tape libraries

BY DENI CONNOR

EMC next week plans to roll out three new virtual tape library appliances that back up data faster and have greater capacities than previous Clariion disk libraries, letting customers back up more data faster to disk.

EMC also is expected to preview a new version of its high-end Symmetrix DMX-3 storage array. The DMX-3 950 is an entry-level array for this platform. The company also plans to preview new iSCSI and Fibre Channel connectivity for its midrange Clariion arrays and new Navisphere software for the Clariion that lets IT administrators set QoS levels. EMC also is set to preview new models of its network-attached storage Celerra NSX and NS Series.

EMC declined to comment on the announcements.

According to company documents obtained by *Network World*, the DL4000 Series has twice the performance and capacity of the previous EMC CDL. The DL4000 Series consists of three models, which will replace the current DL710, DL720 and DL740. The new DL4100, DL4200 and DL4400 are priced as much as 10% lower than the DL700 series appliances.

Each model of the DL4000 Series has 4Gbps Fibre Channel and uses EMC's UltraScale architecture, which consists of PCI-Express technology to sustain high bandwidth and low latency. The DL4000 Series joins EMC's low-end DL210, which has a total capacity of 24TB.

Each DL4000 Series appliance consists of an Intel controller, 12 4Gbps Fibre Channel ports and six Gigabit Ethernet ports, connected to Clariion CX3-80 storage arrays via a QLogic host bus adapter. The DL4100 and DL4200 perform at up to 1,100Mbps; the DL4400 performs at speeds as fast as 2,200Mbps.

"Obviously there is more data that needs to be stored for longer periods of time; we need large-capacity storage systems to address the needs for consolidated and tiered storage," says Greg Schulz, senior analyst for StorageIO. "If you look at the VTL market, it continues to grow — as organizations adopt VTL technology, it only makes sense to have bigger and larger VTL configurations with more capacity and controllers."

The DL4100, a single Intel controller version, tops out at 170TB and 1,024 virtual tape drives. The DL4200 also has a maximum capacity of 170TB, but unlike the DL4100 it has two controllers. The DL4400 has a maximum capacity of 340TB and can support as many as 2,045 virtual tape drives.

All models in the DL4000 Series support DL Copy, Automated Control System Library Server software for Sun/StorageTek tape libraries, Active Engine Failover, Legato NetWorker Node Manager and the Symantec NetBackup Media Server software. DL Copy lets administrators replicate data between local or remote locations.

EMC's consolidated media management software lets customers manage both virtual and physical tape pools via a single application interface. Operation of the Disk Library is integrated with the NetWorker and NetBackup software and supports cloning of virtual to physical tapes locally or over distance.

New software capabilities with the DL4000 Series include the ability to manage as many as eight EMC disk libraries, support for twice the number of emulated virtual tape libraries and drives, and enhanced IP replication capabilities.

EMC's CDLs compete with those from Network Appliance, IBM and Sun. Unlike EMC's 4Gbps performance, IBM, HP and Sun provide 2Gbps.

Pricing is not yet available for the new DL4000 Series appliances, which are expected to be available in November. ■

Virtual reality

EMC's new virtual tape library appliances are twice as big and fast as its DL700 Series.

Features	DL210	DL4100	DL4200	DL4400
Maximum capacity	24TB	170TB	170TB	340TB
Write performance	380M bytes/sec	1,100M bytes/sec	1,100M bytes/sec	2,200M bytes/sec
Emulation engine(s)	Single	Single with standby option	Dual with Active Engine Failover	Dual with Active Engine Failover
Front-end/back-end ports	Three	Eight	16	16
Maximum virtual tape libraries supported	16	128	256	256
Maximum virtual tape drives supported	64	1,024	2,048	2,048
Maximum virtual tape cartridges supported	4,096	64,000	128,000	128,000

Lottery group bets on mgmt. appliance

Multi-State Lottery Association puts its money on Jumpnode Systems' hosted services.

BY DENISE DUBIE

The network managers behind the organization responsible for doling out Powerball and Lotto numbers across about 31 states don't want to take any chances on their network-monitoring tools.

The Multi-State Lottery Association this year is betting on a management start-up (www.nwdocfinder.com/5782) that delivers its product via a management appliance and a set of hosted reporting and analysis services. That's why Sean Lair, technical adviser to the director at the Multi-State Lottery Association in Urbandale, Iowa, upgraded his network-management system in March to a "more resilient product" from newcomer Jumpnode Systems.

Founded in 2004, Jumpnode couples hosted management services with an appliance that resides in the customer network, and distributes its products through resellers and managed service providers. The company, which in June garnered more than $5 million in funding from Apple Core Holdings and Opticality Ventures, uses an appliance model similar to that of fellow start-up Kace. Lair says that appealed to him, because he is short on staff and doesn't have the time to patch, maintain and upgrade software.

"In our environment, uptime and availability is so very important, and while we had other tools in place that worked, we wanted something that could do more trending and reporting, and that was very resilient," he says.

Lair had been depending on Ipswitch's WhatsUp Gold software to keep network and Web site services available and working smoothly for some 31 state lottery groups. The software worked, but required more maintenance and updating than he wanted and didn't do enough reporting and analysis for capacity planning across the multiple Web sites his organization hosts for member lotteries. Like fellow newcomer Klir Technologies, Jumpnode provides and performs the analytics that time- and budget-strapped network managers can't always do.

An existing vendor proposed Jumpnode's appliance-based product set, which features various connectivity options that Lair found

See Lottery, page 79

Profile: Jumpnode Systems

Founded:	July 2004
Headquarters:	Minneapolis
Primary business:	Develops IT systems and network management tools, using an architecture that combines preconfigured plug-and-play hardware appliances with software delivered as a hosted service.
Investors:	$5.1 million in funding from Apple Core Holdings and Opticality Ventures in June 2006.
Management team:	Irfan Khan, president, CEO and co-founder, previously co-founded Agosto, an infrastructure and operations outsourcing firm; Rick Baker, interim COO, general counsel and co-founder, previously oversaw worldwide strategy and operations for HB Fuller Company; Rob Bajorek, director of technology, previously worked as senior systems engineer at ING Financial Services.
Origins of company name:	From an original concept that the product interface should be almost game-like — it should be so easy to use that you would jump to use it. The term "node" refers to the boxes.

Today, Carlo restored a failed router in Miami, rebooted a Linux server in Tokyo, and remembered someone's very special day.

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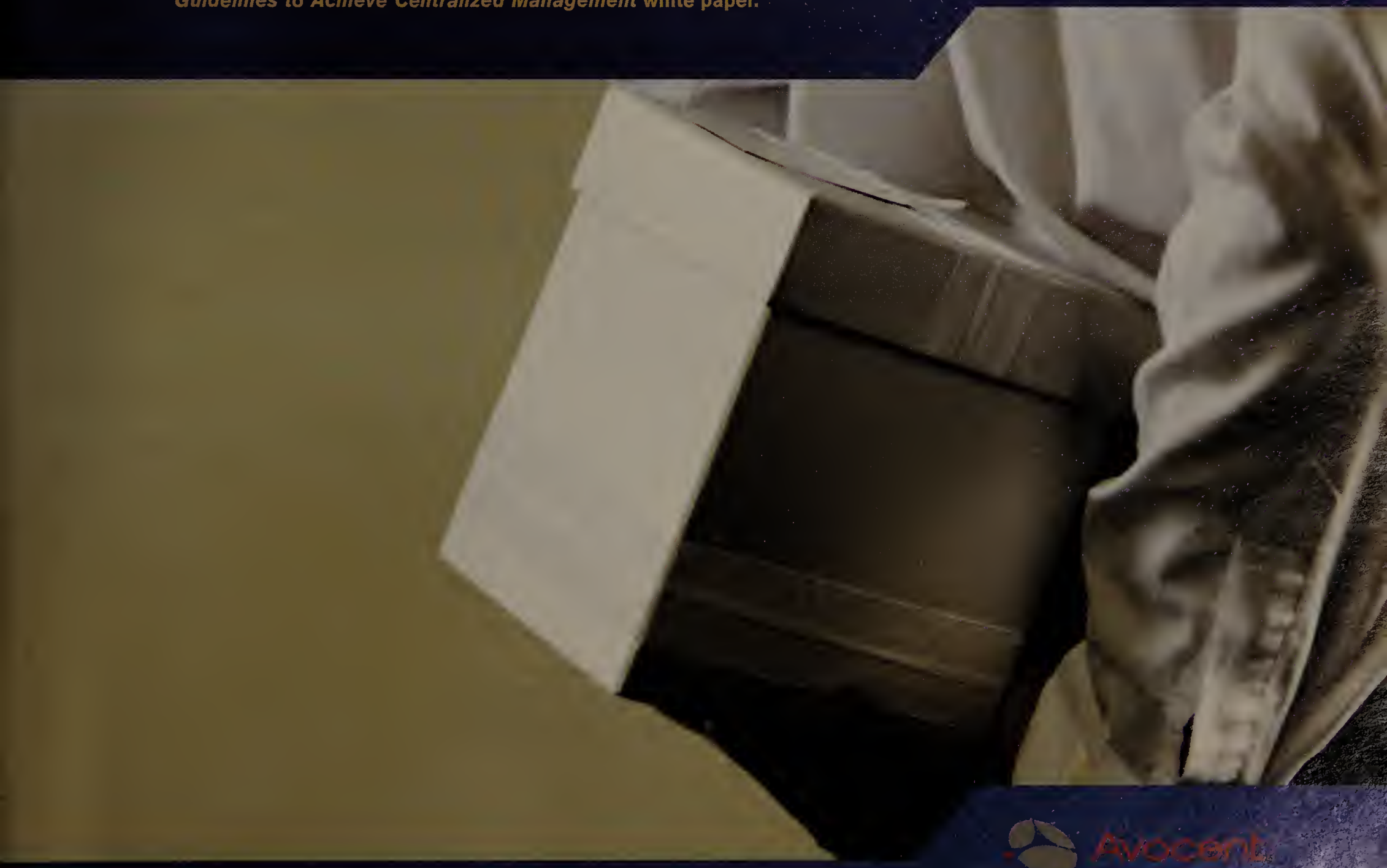

Avocent

Cisco airs all-in-one net access client

BY PHIL HOCHMUTH

Cisco last week launched network access-client software that gives users a single-logon interface for attaching to wired, wireless or remote-access networks.

The Secure Services Client 4.0 combines several network access technologies into a single piece of software, giving customers the same interface for corporate network access. Cisco says the software makes network administration and access management easier by reducing the number of user client applications that need to be distributed and supported.

The 4.0 release aggregates a range of network access protocols and connection methods, including 802.1X — a protocol for authenticating users to a network device or port, as well as several versions of the Extensible Authentication Protocol. For wireless access, the Wired Equivalent Privacy and Wi-Fi Protected Access protocols also are supported. Data encryption using Temporal Key Integrity Protocol and Advanced Encryption Standard technology are supported.

The client software works with Cisco's Secure Access Control Server — a network access management platform and authentication server — and with Cisco's Network Admission Control architecture, which provides user device scanning and authentication services for PCs, laptops and other machines attempting to access a network.

The Secure Services Client is a desktop and notebook PC application that handles identity-based management of the device and its user, controlling access to the corporate network. Network administrators can create security profiles for users or devices, group them, and then grant or deny access, says Chris Kozup, manager, mobility solution, with Cisco's wireless business unit.

The Secure Services Client is based on technology Cisco bought in July from Meetinghouse Data Communications for $43.7 million. ■

New Extreme CEO speaks out

When a former server/storage executive takes over a network company, everyone expects change. This process is happening at Extreme Networks, where new CEO ***Mark Canepa*** *started in August after a stint as the executive vice president of Sun's data management group. He spoke with* Network World *Senior Editor Phil Hochmuth about his plans for Extreme, how he will compete with Cisco and the convergence of data center technologies. The following is an edited transcript.*

What are your priorities as CEO?

What I'm going to focus on at least for the first few quarters are operational kinds of things. The company is focused on doing a lot of different things for its size. So the first order of business is really to do some market segmentation. It's a $55 billion Ethernet IP market. We're a $400 million revenue [company]. Let's go find the market segments that make sense and then let's really throw the whole company behind them.

We have the luxury, being our size, to pick some spots. When you're this kind of size, whatever you choose to do, you'd better be the best at it. You have to punch through whatever the big guys are trying to do. That's going to be the game plan over the next couple of quarters. Get the revenue stream headed in the right direction; get that stuff headed in the right direction and then take it from there.

Was Extreme heading in the wrong direction prior to you coming in?

I don't bring any preconceived notions either from being inside this company or from the network industry [itself]. I'm not a networking guy per se, I'm a computer guy; I've been plugging things into the network most of my life. I've been building products into the network, so to me the network is always something that's sitting right next to you. But I don't really come at this with a lot of preconceived notions. So it's going to be a pretty pragmatic approach to figure out what are our core competencies and what is the differentiation we are trying to create. And what is the true value that differentiation generates? That's the pretty basic question I'm asking [everyone at Extreme].

So the challenge is really that. Let's take the wishes away from this. Let's just be pragmatic, and if it makes sense it makes sense. But let's not delude ourselves about what makes sense.

How will competing against Cisco, Nortel and others in the network market differ from competing against EMC, IBM and HP in storage?

You have to attack it differently. If you're a Sun, a big, integrated systems company, you have lots of different things. Sun's brand strategy was built around Sparc and Solaris. The real primary job was to take care of a piece of a system; you have a big installed base and a big demand-creation machine on the server operating system side. And half of your business is simply caring for that.

You had EMC, but they were third in size after IBM and HP. So you have three integrated companies and then EMC. In the network space, there's a lot more pure play. Cisco is Cisco of course. With a company like Extreme, you don't have a whole [group] of other businesses [like Cisco]. What you've got is nimbleness. What a company like Extreme can do that a company like Cisco can't is to move quickly and be nimble.... There are some things big companies can do and they do very well. So when you're in a company this size, you have to realize what big companies can do very well and just don't do those things. Then find out what big companies can't do and act quickly to do those things. And that's the trick.

Is wireless the right business for Extreme to be in? Can it be a leader in wireless LANs?

That's an interesting question. If you look at the wireless market, it's about a $1 billion market. You could equate it a bit with selling optics. It's a connectivity technology. So we're going to have to explore. There are two ways to think about this. One is the pure technology aspect: do you want to be in the business of developing the hardware, the software, the sheet metal? The other is at the systems level. If you are going to be a provider of sophisticated enterprise access technology, wireless is a very intriguing technology, when you also offer things like access control and security. Wireless is a veritable pool of viral infection. It's a great way for hackers to get into a company; it's all over the place and you can't control anything. A customer who is nervous about running wireless is going to be asking a lot of questions about security, and Extreme can be the kind of sophisticated company that can come in and help them. So we need to distinguish a wireless [business] from the bits-and-bytes [development], from wireless as a piece of the enterprise [puzzle]. We may end up with different answers. Within the next few months [we'll figure out our strategies as to what we want to be involved in]. So far our strategy has been to partner on a lot of the technologies.

> The first order of business is to do some market segmentation.

Do you feel advanced switching — high-end, high-speed switching — is still Extreme's core competency? Or has the company gotten away from that?

At first, Extreme's core competency was putting Layer 3 technology into Layer 2-style hardware and just blowing away everyone with speed. But in practically every industry, you never survive on speeds and feeds. They get you going, but pretty soon you'd better start being in the business of solving customer problems. And most customer problems are not reflected in speeds or feeds. It's fun to watch Intel. It used to be microprocessors were all about megahertz and gigahertz. Now [clock speeds] are gone. Now it's called Duos, Centrino ... anything but megahertz and gigahertz. So even the CPU business, which was governed by the numbers of speeds and feeds, is changing. That doesn't mean we're not going to be right there to ensure that our products are fast. We have people on the standards committees for 100 Gigabit Ethernet and driving all of that. But you can't run a company purely on speeds and feeds. At one level yes, but at another level we're going to be more of a broader company, focusing on how we can solve customer problems — problems that are application driven. Extreme will be much more focused on what are the applications, and how can we make them run better. ■

nww.com

More from the interview

Read a full version from our conversation with Extreme Networks CEO Mark Canepa.

www.nwdocfinder.com/5746

[1]Based on published power usage data available from both companies, the IBM HS20, model 7981KFU, BladeCenter with 2GHz dual core 2M cache processors, 8GB of memory, 2x36GB SAS HDDs, dual Ethernet, dual Fibre Channel can use up to 37% less power than the HP BL20pG3 with 3.0GHz 2M cache processors, 8GB of memory, 2x36GB SCSI HDDs, dual Ethernet, dual Fibre Channel. Analysis performed on May 31, 2006. IBM, the IBM logo, BladeCenter, and Take Back Control are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Intel, Intel Inside, the Intel Inside logo, and Intel Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and/or other countries. Other company, product, and service names may be trademarks or service marks of others.

_INFRASTRUCTURE LOG

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_Gil says he's lost a lot of weight. I hadn't noticed.

_DAY 17: I found a cooler answer to our heat problem: the IBM BladeCenter® with Intel® Xeon® Processors reduces the overall amount of power required by the system. The BladeCenter is designed to respond automatically to power events and can use up to 37% less energy[1]. Less power. Less heat. Less money. Less stress.

_Oh, apparently HR had a problem with the dress code but couldn't call and tell us, since the phones had melted.

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Cisco

continued from page 1

expected to launch this week. The high end of these multicomponent packages has three 65-inch high-definition plasma displays, an appliance that combines a high-resolution IP video camera, echo cancellation, four-channel IP audio- and IP video-encoding hardware and software, and network connectivity.

The 3000 system even includes a specially built half table, designed to look like a large oval ring when it's combined with the plasma screens, which show an identical setting on the other side of the conference room. Cisco also has specifications for the room's background color and lighting.

"We're even in the furniture business now," says Randy Harrell, director of product marketing for Cisco's TelePresence group, which is one of the company's Emerging Technologies business units.

"This is not something you really want to put in the same class as videoconferencing," says David Willis, an analyst with Gartner, who has seen Cisco's and HP's telepresence offerings "First off, it may actually work in displacing meetings. Secondly, it's a much bigger investment to pull it off."

> "This is not something you really want to put in the same class as video-conferencing."
>
> *David Willis, analyst, Gartner*

For companies willing to spend and build the infrastructure to support telepresence, however, the experience is impressive, he adds. "If [telepresence] is designed and implemented properly, you really can have a quality meeting without any second thoughts about the tech being there."

The TelePresence systems come with a Cisco CallManager IP telephony server, used to administer the system and control the setup of TelePresence sessions. The in-room interface for setting up a meeting is a Cisco IP phone, attached to the CallManager. Cisco says the CallManager platform also enables integration with Microsoft Outlook and Lotus Notes, which can be used to schedule room times and send e-mail or voice mail reminders to meeting participants.

Cisco says it has designed a video codec that compresses the three 1080p video streams and four audio channels into a 10M-to-15Mbps IP data stream. Cisco says the system's network latency is less than 250 millisec, which is the limit for perceptible levels of network delay for images and video.

The company has identified 25 channel partners including Dimension NexusIS, Presidio, World Wide Technology and others authorized to offer the TelePresence systems, which include services such as on-site network assessments to ensure the data infrastructure and carrier services can support the technology. (Cisco describes the setup of the system as a two-day process. Partners AT&T and Verizon provide bandwidth services for TelePresence systems, based on metro Ethernet last-mile services, and MPLS core services for transport.)

Cisco says the system uses standard protocols, such as Session Initiation Protocol for session setup and transport. The Interactive Connectivity Establishment, a proposed industry standard supported by Cisco and Microsoft, lets separate businesses with a TelePresence system establish Internet-based connections securely through corporate firewalls without adding latency to the traffic stream.

Building the TelePresence technology was a two-year, multimillion dollar development effort involving more than 100 engineers — about 40 of whom were hired from outside the company. Cisco says all system components were developed and built in-house; it had to hire to account for its lack of expertise in acoustics, cameras and high-definition plasma display manufacturing.

Cisco's TelePresence product will compete with products from traditional video conferencing vendors, such as Polycom and Tandberg, which have gone into telepresence by partnering with high-definition equipment vendors. The competitor Cisco will most likely butt up against is HP with its Halo telepresence offering, which was launched last year and has more than 60 installations with 12 customers.

HP's Halo approach is similar to Cisco's — oversized plasma TV screens replace people at a conference table, and real-time interaction is delivered via IP audio and video streams. HP's approach to telepresence is more service-focused, however. With the Halo Video Exchange Network (HVEN), bandwidth services are provided by carrier partners selected by HP and specific to the regions where Halo customers are located. A larger pipe is required — a dedicated 45Mbps T-3 link. Rooms cost as much as $425,000 to set up for Halo, and an $18,000 per-month service fee is required. (HVEN includes language interpreter services.) Halo's video display is 720p in resolution.

The system supports multipoint telepresence meetings, where as many as three locations can be linked into the same meeting — a capability Cisco says it will have next year.

"We're trying to carve out a space at the highest end of the telepresence market," says Ken Crangle, general manager of HP's Halo business. "Given what we wanted to do, and what we had in terms of latency and quality of service characteristics ... there wasn't really a way to do that over the public Internet."

Crangle says HP's proprietary codecs and protocols and service-based approach solve the issues of linking across corporate security boundaries and ensuring the low-latency bandwidth the system requires.

"Telepresence is definitely a cool technology, and I do think Cisco and HP are on to something," says Ellen Daley, an analyst with Forrester Research, who was shown a demo of the Cisco product. "But this is way more costly than getting a standard video conferencing system set up. It will be a niche technology for those top executives in big enterprises, who feel it will be an investment [not just to] save on travel, but to promote more face-to-face interaction."

Analysts don't expect telepresence products to be a large-volume business for Cisco.

"At $250,000 a site, you don't have to sell too many of them to have a good business," Gartner's Willis says. ■

So close, yet so far

Cisco's TelePresence 3000 system is meant to create the illusion of a face-to-face conference room meeting via high-definition displays, audio/video conferencing technology and some visual tricks.

A high-definition IP video camera and 60-inch HDTV plasma displays are supposed to create the illusion of remote participants sitting across a table.

- The TelePresence 3000 comes with Cisco's CallManager 5.1 call server, which is used to manage sessions. Meetings are controlled via a Cisco IP phone.
- Cisco now is in the furniture business. A specially designed semielliptical table — that seats users the proper distance from the screen — is part of the package.

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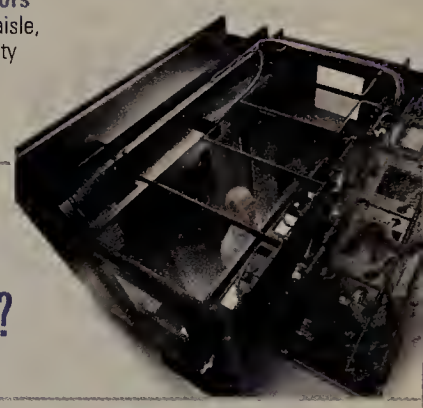

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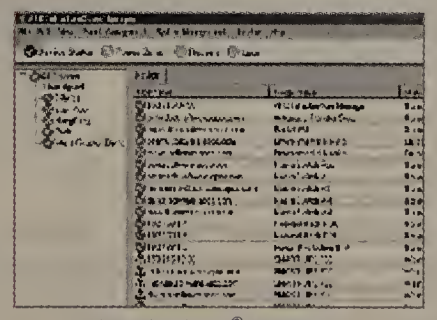

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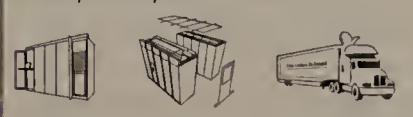

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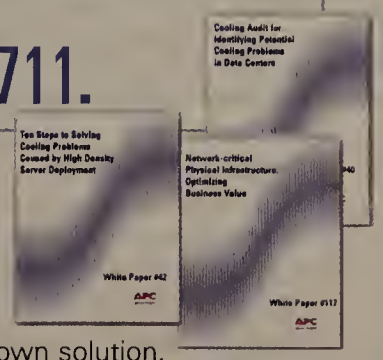

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NET INSIDER

Scott Bradner

In Vista, to license means 'to restrict'

Reading software licensing agreements is not the most fun thing I can think of, but sometimes a columnist has to forsake fun.

I spent time doing this because of some press stories about bothersome restrictions in the new license for the home editions of Windows Vista. It turns out this license is quite well written and only a little strange but does limit purchasers in a couple of ways.

It's been a long time since I read through a Microsoft software license so I do not know when they started using the English language (rather than level-23 legalese), but it sure is a nice thing. This license (www.nwdocfinder. com/5736) is very easy to read and understand, but it is rather long at 14 pages.

I compared the Microsoft Vista license with the Apple license for the latest version of its operating system (www.nwdocfinder.com/5737). Apple's Panther license is only three pages long — although it is in smaller print — and contains fewer restrictions than the Microsoft license, but is nowhere as clearly written. The Apple lawyers must not be as willing to make it so mortals can understand. The Apple license clearly states that the software is not intended to be used for controlling nuclear facilities, aircraft systems, life support systems or anyplace where someone might get hurt if the software failed.

Apple says upfront that the software does not belong to you — you only get a license to use it. It takes Microsoft five pages to get around to mentioning that, but the result is the same. Maybe because this is the license for the home editions of Vista, you are limited to running the software on two processors at the same time — this could be a problem in a few years considering industry directions (my new Mac pro has four cores; I'm not sure if that is two processors or four).

The media coverage on the new license focused on the new single license transfer limitation and the restrictions on using the home versions of Vista in virtual machines. The transfer restriction says you can reassign the license to a different device only one time, so if you replace your computer more than once you will need to buy another copy.

The license says you cannot use Vista Home Basic or Home Premium in a virtual machine. You can use Vista Ultimate in a virtual machine but you cannot play any content protected by Microsoft rights management technologies. In other words, you cannot run Vista on your Mac using Parallels unless you have the Ultimate version and then you cannot play music or some games — seems far from ultimate to me.

The Microsoft license also says you may not "work around any technical limitations in the software." Does that mean you cannot address security bugs using third-party fixes? The fact that the language is clear does not mean that it all makes sense.

Disclaimer: I hope there are classes in clear language at the Harvard Law School, but I'm not sure. In any case, the above review is mine alone.

Bradner is Harvard's University Technology Security Officer. He can be reached at sob@sobco.com.

Identity federation consortium adds members

BY JOHN FONTANA

InCommon Federation, an identity hub that helps universities securely share resources, brought more schools and service providers to its fold last week and further strengthened its message that sharing identity is essential to securing distributed networks.

The federation, which serves as the trusted facilitator and policy setter for identity exchanges among universities and service providers, added 10 universities, four service providers and an independent security provider to its hub. It now has 35 in its federation, which is a model for Internet2 technologies.

It also is a model to justify the benefits of identity federation, in which two or more organizations establish trust between their identity systems so users authenticated by one company can access resources on the network of another company.

InCommon is proving that federation can secure information access among partners while ensuring the privacy of individual users.

Federation is happening on a global scale, says Tracy Mitrano, director of IT policy at Cornell University and the chair of the InCommon Steering Committee. "There is no question that higher education is already participating in a flat world, so to speak, and federation makes that possible."

The InCommon Federation uses the Shibboleth identity federation architecture as the basis for controlling access to the resources maintained by members. Shibboleth is based on the Security Assertion Markup Language (SAML) and is a foundation technology for Internet2's Abilene Network. The architecture also lets universities and individuals set privacy policies to control what type of user information can be released to each destination.

The Internet2 consortium, which is made up of 208 universities, has developed the Abilene Network for education and high-speed data transfers.

Those transfers are being secured through InCommon's framework, which requires participants to share authoritative and accurate identity information and information about their identity management system.

InCommon is not a hub that routes network traffic but instead shapes policy for joining identity management systems. InCommon members communicate directly with one another over the Internet and Abilene Network.

Based on disclosures made through InCommon, federation members decide if they trust one another's identity management systems and if they want to federate those systems so they can exchange SAML assertions to validate user authentication and provide authorization to access network resources. InCommon does not dictate a minimum set of requirements each participant's identity system must include.

Federation is one element of the explosion in technology around identity management, which is widely regarded as key to securing digital resources on distributed networks.

New to the fold

InCommon Federation, which is an identity federation hub for higher education, added a slew of participants recently, including universities and service providers.

Universities:	Service providers:
Miami University	Turnitin (plagiarism prevention)
Ohio University	Symplicity (career management)
Stanford University	Houston Academy of Medicine — Texas Medical Center Library (medical content)
University of Alabama at Birmingham	Cdigix (digital entertainment and educational content)
University of California — Merced	Protect Network (private identity provider)
University of California — Riverside	
University of Chicago	
University of Maryland, Baltimore	
University of Maryland Baltimore County	
University of Virginia	

Major companies such as IBM, Microsoft, Novell, Oracle and Sun are building the technology into their identity management suites. And independent vendors, such as Ping Identity, also offer federation technology, which is used by such companies as American Express and New York Life.

The InCommon network consists of 24 universities (see www.nwdocfinder.com/5738) and 11 sponsored partners, such as new member Cdigix, which has a portfolio of legally available digital entertainment and educational content for higher education.

The company recently partnered with the University of Washington to offer students and facility access to that portfolio. The secure access is based on the InCommon framework so Cdigix can ensure controlled access without revealing users' personal information.

The University of Maryland Baltimore County and Penn State University use InCommon as the basis for a partnership with Symplicity, which helps students manage, identify and apply for internships and postacademic careers. Penn State also uses plagiarism protection services from Turnitin through the InCommon network so professors can better monitor for plagiarism.

InCommon has two criteria for trustworthiness that members must follow. Their identity management system must fall under the purview of the organization's executive management, and the system for issuing user credentials must have appropriate risk management measures.

The group also is looking to establish new criteria to govern federations where sensitive or regulated data is exchanged.

"When we look at particular protected resources that have constraints and highly regulated sensitive data or services, we are looking at can we have another level where we establish criteria that participants would be required to meet in order to be involved in this new level of federation," says John Krienke, manager of integrated operations at Internet2 and operations manager for InCommon.

InCommon is setting up a model for addressing the questions that abound when organizations federate identities. ■

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SPECIAL FOCUS INSIDER THREAT

How well do you know your network?

BY CARA GARETTSON

The information security officer for a network of healthcare centers in New York found an employee sending confidential payroll information to a recruiter. A California-based semiconductor manufacturing technology provider caught a worker e-mailing PowerPoint slides detailing product plans to a former colleague at a competitor to show off the "cool things" he was working on. A network administrator for a school district in Indiana nabbed a student trying to finagle school lunch account information stored on an off-limits server.

These are just some of the things you can learn when you take a good look at what goes on inside your network.

"Oh, you'd be surprised," says Mark Moroses, senior director of technical services and information security officer with Maimonides Medical Center in Brooklyn, who found an employee instant-messaging payroll information — including Social Security numbers — to a recruiter.

That discovery came about three years ago when Maimonides was looking for a way to better control who was accessing information on its network, per Health Insurance Portability and Accountability Act specifications, and because the company has to give network access to users who aren't employees, such as referring doctors. Maimonides brought in security vendor Reconnex, which set up a risk assessment test that monitored the network for 48 hours.

'An eye-opening experience'

"It's an eye-opening experience," Moroses says of the test. Having found numerous instances of questionable employee productivity (extended visits to Myspace.com, for example) as well as some policy breaches, the company installed Reconnex's electronic risk protection offering to monitor employee interaction with the outside world, and is now leveraging the product to ensure that employees are only accessing the internal information that they are authorized to view.

"We've gone through an awakening in stages, we put [Reconnex] at all our egress points because we wanted to know what's going out, what's coming in … it leads you to ask questions about what's going on internally, people accessing internal data," Moroses says. "We've looked at the edge, now we're looking internally."

Reconnex is one of a handful of vendors that make up a relatively new area in the security market that also includes vendors such as Oakley Networks, Vontu, Vericept, PortAuthority Technologies, Securify and Tablus.

Called a variety of terms, including network content filtering/control, network leak prevention, extrusion prevention and risk protection, this category is largely defined by products that monitor multiple network protocols with sophisticated word analysis and automated data discovery techniques to alert administrators when sensitive information is being accessed by unauthorized employees and/or sent outside of the network. As these products mature, the facility to block sensitive information from being viewed or sent out of the network is being added.

While having such a view into your network sounds as good as a superpower, there are trade-offs.

First, there are the upfront costs; typical configurations for these tools — most of which are appliances loaded with specialized software — generally start between $25,000 and $50,000. In the defense-in-depth model that's become a popular way to describe the need for multiple layers of information security required in and around an organization, these tools are secondary to the perimeter products such as firewalls and intrusion-detection systems required to keep unauthorized users off a network.

Then there's the time and energy required to customize these tools so that they understand what an organization deems sensitive.

"In advance of using this kind of tool, you really have to decide what to use it for, what nuggets [of information] are you looking for, because these tools really will give you everything," says Tom Scocca, investigator and global security consultant for a large provider of microprocessor manufacturing technology, which has about 17,000 users on its network. The company uses Oakley Networks' CoreView appliance, and Scocca says the vendor was very helpful in tuning the product to meet its needs.

But still the company needed to decide what its crown jewels were before the tool could be effective, Scocca says.

"If you don't have any idea about what's important to your company's bottom line, then this is just a fancy tool to let you know what's traveling across the wire," he says.

Others say these tools are indispensable in this day and age where protecting information means protecting assets.

"Information has a dollar value [today], whereas 10 years ago no one knew how to equate it," says Sharon Finney, information security administrator at Dekalb Medical Center in Decatur, Ga., which uses Vericept to monitor is 3,500-user network. "Now, because you can tie all this [personal] information together into a meaningful picture of a person, then that information does have a dollar value, and it's important that it be protected."

Then there's the privacy issue. While in the United States there are no laws against a company claiming rights to everything an employee does when using the corporate network, the same isn't true in some European and Asian countries, where the notion of an individual's privacy trumps corporate policy.

Of the handful of organizations interviewed for this article, only one had informed its employees that it was using a network content monitoring tool; the remainder rely on their corporate policies that they believe give them the latitude to monitor network use.■

Monitoring tools aim for collaboration

For those who grumble at the idea of having to purchase yet another security product, go through the trouble of configuring it to work with the existing infrastructure and hope that it works with future products, vendors in the network content monitoring market are taking steps to make life easier.

In the past month, a few announcements from these vendors show a greater awareness of the security market around them as they work to integrate their products with others, in an effort that could signal pending consolidation in the security market, according to one analyst.

"[Users are saying] 'Do we really want to spend all this extra money on another individual, point solution?" says Trent Henry, senior analyst with the Burton Group. Partnerships that network content monitoring vendors are making with others in the security industry, particularly messaging security and Web filtering companies whose products share some features, could go a long way to make buying decisions easier, Henry says.

"That [integration] is going to be the best of all worlds, providing richer analytics, multiprotocol scanning … and harmonizing policies between product groups," he says.

Among the recent announcements:

- Reconnex on Oct. 9 announced a certification program for e-mail gateway products to ensure these products work with its content-monitoring offering. To date, e-mail security vendors Barracuda, IronPort and Sendmail have been certified.
- PortAuthority Technologies on Oct. 9 announced a partnership with endpoint security vendor Safend to include PortAuthority's content-aware, policy-based data leak protection in its endpoint security products. The combined product is slated for availability by year-end.
- PortAuthority also announced plans to integrate its information leak-prevention technology with Websense's content filtering and Web security offering.

— CARA GARRETSON

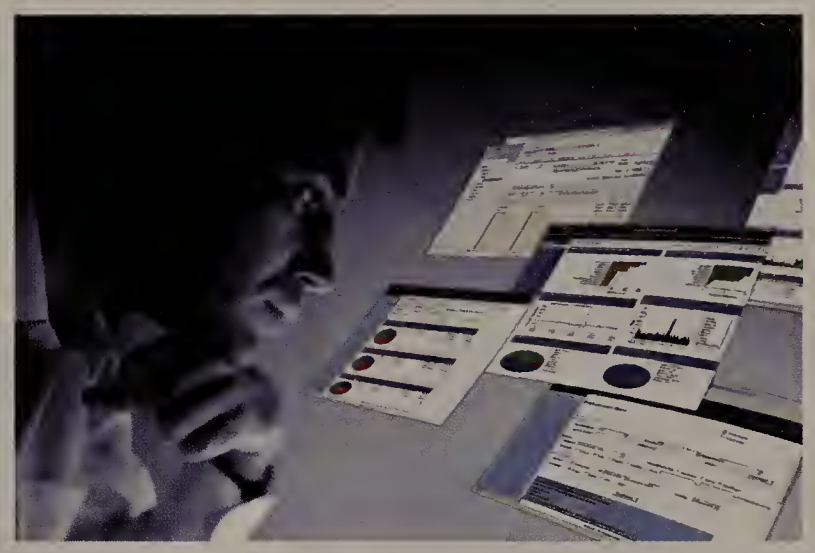
Enterprise Performance Management

Managing application performance over the network

Helping the IT team become more efficient and proactive

In July 2006, Dennis Drogseth, Network Services Practice Leader and Vice President with onalyst firm Enterprise Monogement Associotes, mode the fallawing observotions: "Monoging opplicotions ocross the netwark is acceleroting in importonce to a degree unimogined in the post becouse af the increasingly distributed nature of working, the grawth in opplicotion complexity...monoging applicotion delivery over the network will require tightly-knit teom dynomics supported by monogement technologies thot ollow opplicotion ond network speciolists to see the world consistently...the notion that monoging opplicotion delivery over the network con be done effectively by o group of enclaved individuals with siloed tools – no matter how good those tools ore – simply won't wark when so much is ot stoke ond when the levels of interdependency between netwark performance ond opplicotion performonce ore so high."

Applicotion performonce problems couse ripple effects thraughout o business, fram reduced emplayee productivity to increased customer dissatisfoction ond lass of business. They also significantly reduce IT deportment efficiency, os staff members ore repeotedly pulled oway from development projects to troubleshoot performonce issues.



Why monitor application performance?
Companies have many reasons for monitoring application performance.

A multinational supplier of engineered materials, natural resources, and technology-based services relies extensively on its mission-critical network to connect its many locations. A MPLS migration was planned to support a global rollout of an enterprise resource planning (ERP) application that would touch nearly every function of all its businesses. They needed a solution that could provide in-depth WAN insight, create utilization baselines, and help in properly prioritizing and managing the growth of applications on the network.

A major insurance company wanted to proactively track compliance with service level agreements (SLAs). The company also wanted to test how infrastructure changes (such as consolidating servers) would affect end-user response times, as well as reducing troubleshooting time by seeing exactly what was happening at the time a problem occurred.

A major US commercial bank values good application performance because it maintains end users' productivity – so when problems do occur, the bank needs to troubleshoot them efficiently. "We were spending a minimum of 20 hours a month – sometimes up to two or three weeks – trying to diagnose the cause of application slowdowns," says a network engineer. "We just didn't have the staff to keep doing that." A particular problem, he notes, was trying to determine if a slowdown was a network issue or a server issue. "When our network team thought it was a server problem, the server team would often claim it was a network problem," he said. "It was difficult to pinpoint the exact trouble spot."

Fluke Networks to the rescue
These three companies have found Fluke Networks' Enterprise Performance Management solutions provide accurate, detailed insight into application performance throughout the enterprise. As a result, IT staff can quickly determine whether a problem is network, application, or server related and can rapidly resolve the issue.

For example, the CIO of the multinational supplier stated, "Visual UpTime Select was instrumental to the success of our multi-million dollar ERP initiative because it gave us the knowledge and confidence that our MPLS network was fully optimized for the rollout. With Visual UpTime Select, we could see how our ERP application performed on the network by viewing application throughput in real-time and we could quickly detect and troubleshoot traffic anomalies. As we made our migration from frame relay to MPLS, the technology once again proved itself by providing us with the functionality to ensure the migration and the ensuing ERP deployment was quick and painless."

Today, their network is served by three major carriers and supported internally by a handful of individuals. The company's network challenges are increasingly focused on managing the wide array of traffic – ERP, Citrix, email and Web, among the most notable – traversing its network. In fact, the organization has seen a 35 percent growth in application utilization in the past few years across its 70 global sites.

"Using Visual UpTime Select, we are able to pinpoint network traffic anomalies before they disrupt the flow of business," concluded the CIO. "This technology is the core component in our WAN management solution. It saves us significant time and money and allows us to deliver an exceptionally high level of WAN service at a reasonable cost."

While this organization needed complete WAN-based visibility into each of their locations, other companies have found that a data center-based approach to performance management is a better fit for their requirements. Fluke Networks provides its customers a variety of performance management options – creating unique solutions for unique needs.

According to the insurance company's IT manager, "SuperAgent helps us better serve our end users by being proactive with application performance issues – and being able to more effectively baseline application performance helps us ensure that we meet our established service level agreements for transaction times." When problems do rise, he notes that SuperAgent "can mean the difference between a one-hour slowdown and a one-day slowdown."

The commercial bank finds SuperAgent's performance monitoring capabilities make the IT department more proactive, identifying and resolving problems before users are even aware of them. The tool's enhanced troubleshooting capabilities save them at least 20 hours a month. Plus, it has made a big difference in the relationship between the network and server teams, replacing finger-pointing with cooperation. "Now the server team comes to us when they have a problem and asks us to monitor their servers," says a network engineer. "We also get requests for troubleshooting help from other business groups in the main office. They all think SuperAgent is fantastic – they are overwhelmingly impressed with its reports." He also describes a case where slow performance of a vendor-hosted application was causing a department to fall behind in its work. SuperAgent identified the vendor's server as the source of the problem, and the vendor – who hadn't previously been aware of the difficulty – was able to quickly fix it. "We just couldn't do any of this without SuperAgent," concludes the bank's network engineer.

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Security
continued from page 1

start-up but in unstructured data management; the fact that the company does encryption was a byproduct," says Craig Gomulka, a director with Draper Triangle Ventures in Pittsburgh, which invested in BitArmor. "But the encryption is the enabling technology; without that base you wouldn't be able to do this."

Below are 10 security companies we think are worth watching. Some are new to the market, others have reinvented themselves recently, still others are just beginning to make their mark on the corporate mind-set. All of them are worth keeping an eye on.

BitArmor Systems

Founded: 2003

CEO: Patrick McGregor, who held a technical position at Hewlett Packard Laboratories

Headquarters: Pittsburgh

Funding: $5 million from Draper Triangle Ventures and Clearwater Capital Partners

What the company offers: BitArmor Security Suite, software that lets IT protect and manage the life cycle of stored data. The product eliminates the need for public key infrastructure-based key management through a proprietary, automated approach.

Why the company is worth watching: In addition to encrypting data, BitArmor lets administrators create policies for data storage and retention. Policy management is a growing issue with encrypted data.

How the company got its start: Co-founders Patrick McGregor and Matthew White were undergraduate students together at Carnegie Mellon University and continued postgraduate research on what eventually became the BitArmor Security Suite.

Where the company got its name: After discovering that companies already had taken nearly every name of a Roman or Greek god, the founders focused on a name that describes the product's function.

Who uses it: The product began shipping in September. The company has not released customer names yet.

Read more: www.nwdocfinder.com /5729.

Cogneto

Founded: 2006

CEO: Ralph Scobie, former CEO of PCS Wireless

Headquarters: Seattle

Funding: Not disclosed

What the company offers: Unomi, a risk-management software service for cognitive authentication: the process of evaluating user behavior during the online authentication process by tracking input-device responses to various questions.

Why the company is worth watching: With Unomi, Cogneto is seeking to use academic research on cognitive psychology, behavioral biometrics and online behavior for a real-time analysis of risk based on a score of 1 to 100.

How the company got its start: Cogneto's Chief Scientist Martin Renaud believed the cognitive psychology research of Barry Po, a computer science professor at the University of British Columbia who is Cogneto's director of user experience, could be developed into a risk-management product for government and industry to authenticate users online.

Where the company got its name: Cogneto is derived from the word "cognition."

Who uses it: Unomi is set to be released this month.

Cryptolex Trust Systems

Founded: 2003

CEO: Clovis Najm, whose previous experience includes sales and marketing positions at CryptoCard

Headquarters: Owings, Md.

Funding: $150,000 from the U.S. Navy and the state of Maryland, plus an undisclosed amount of private funding

What the company offers: The Mobio handheld device supports multiple strong authentication methods, including encryption-generated one-time passwords, VPN methods, a fingerprint scanner that can convert this biometric into a biocode number, plus a wireless-based door reader for physical access. The Cryptolex Universal ID System has a back-end software library for building an authentication server on Unix-, Linux- or Windows-based computers. Specialized applications bundled with the product allow for Cryptolex-based authentication on PDAs and laptops, network access, and physical-access control.

Why the company is worth watching: Combining support for multiple strong authentication types in a small handheld device would be convenient at companies and government agencies with highly mobile users.

How the company got its start: The U.S. Navy and the state of Maryland funded research to come up with a mobile authentication device.

Where the company got its name: "Crypto," because RSA-based encryption is an underlying technology for it, and "lex" stands for "lexicon."

Who uses it: The U.S. Navy is testing it.

Declude

Founded: 2000

CEO: Rich Person, former chairman and CEO of Poindexter Systems

Headquarters: Newburyport, Mass.

Funding: Not disclosed

What the company offers: Antispam, antivirus and denial-of-service protection software at the mail-server and gateway levels, whose unique technology catches the malformed e-mails where viruses hide. This gives customers a new approach to zero-day protection.

Why the company is worth watching: Not as much a start-up as a reinvented company, Declude was founded six years ago but has tapped just 2% of the market because its original e-mail security product was designed to work only with IMail and SmarterMail mail servers. In September the company released Declude Interceptor, a version that sits at the gateway, thus opening up the potential user base substantially.

How the company got its start: Scott Perry, an e-mail administrator, was looking for an effective e-mail security solution, so he built his own, shared it with friends and colleagues, and then started the company.

Where the company got its name: The name Declude has its roots in the words deduce, include and exclude.

Who uses it: Customers from their IMail products include AAA, the Boston Celtics, JVC, Korean Air and Sheraton.

Read more: www.nwdocfinder.com /5730.

Exploit Prevention Labs

Founded: 2005

CEO: Bob Bales, founder of PestPatrol, the antispyware software company acquired by CA in 2004

Headquarters: Marietta, Ga.

Funding: Undisclosed amount of seed capital from angel investors

What the company offers: SocketShield, desktop software for scanning network streams and intercepting and blocking exploit attack code against desktop machines, such as drive-by downloads.

Why the company is worth watching: SocketShield focuses on real-time protection against exploits, crimeware and other zero-day threats to prevent vulnerability-targeting malware being installed on unpatched PCs. An exploit is a bit of code that's used to force another bit of code (usually with a malicious intent) to run.

How the company got its start: In researching attack code launched against unpatched systems, Thompson became convinced nearly all the code was created in handwritten assembly code, not in a compiler, and therefore could be identified through signatures.

Where the company got its name: Its sole focus is on exploit prevention.

Who uses it: Initially available only to consumers, it later will be distributed to the corporate market.

Read more: www.nwdocfinder.com /5731.

KoolSpan

Founded: 2001

CEO: Tony Fascenda, former executive with a number of wireless companies, including Aether Systems

Headquarters: Bethesda, Md.

Funding: Privately held

What the company offers: VPN client on a USB token. KoolSpan's SecureEdge tokens set up a Layer 2 VPN that uses two-factor authentication and per-packet encryption keying, both extremely secure methods.

Why the company is worth watching: SecureEdge eliminates the problem of installing and maintaining client software on remote PCs by supplying all the software needed within the token itself. Plus, it automatically provides two-factor authentication, something that generally requires a separate infrastructure.

How the company got its start: Fascenda and two co-workers from Aether broke away to create SecureEdge.

Where the company got its name: With some help from his daughter, Fascenda came up with a name based on the cool factor behind the product's innovation and the wide span of applications that could take advantage of it.

Who uses it: Customers include Sandia National Laboratories.

Read more: www.nwdocfinder.com /5732.

NetworkStreaming

Founded: 2003

CEO: Joel Bomgaars, former engineer at Business Communications

Headquarters: Ridgeland, Miss.

Funding: $7 million from Southern Farm Bureau Life Insurance and GulfSouth Capital

What the company offers: secure remote control of PCs and servers; the only remote control appliance that enables help desk sessions and collaboration.

Why the company is worth watching: The company started with a simple mission — to speed up resolution of help desk calls — and has made the process more secure by putting all the technology in the customer's hands, not the service provider's. Also, it uses no client software, so the remote machine cannot be taken over via NetworkStreaming's SupportDesk platform unless the user initiates a session.

How the company got its start: Bomgaars

See Security, page 26

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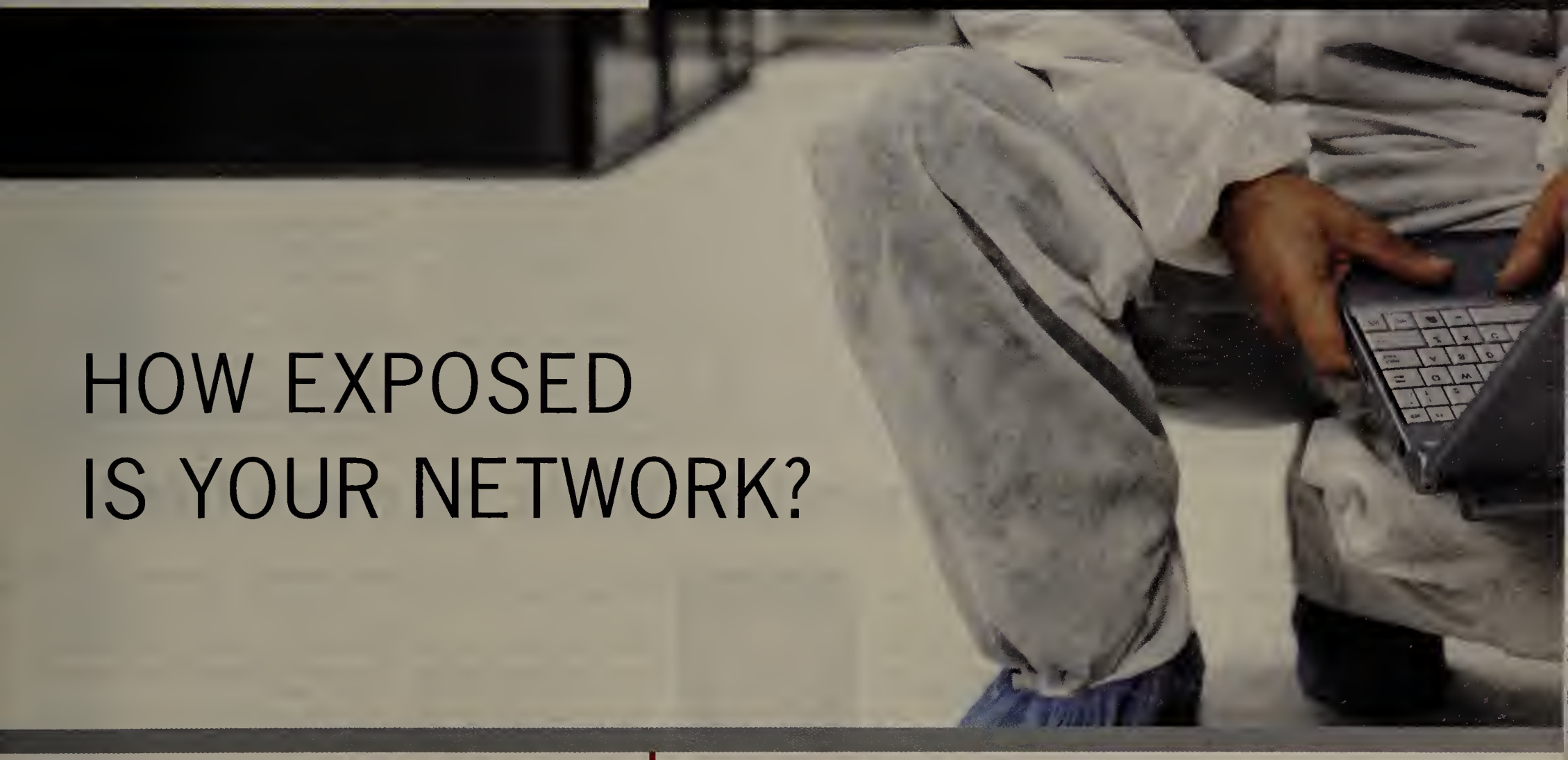

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Security
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was looking for a way to eliminate his having to drive for hours through the Mississippi heat to support his help desk customers, and so invented the platform.

Where the company got its name: The founders were looking for a name that implied the connection of computer to computer.

Who uses it: Customers include Electronic Data Systems, Hilton Hotels, Humana, Panasonic, Texas A&M University and the U.S. Navy.

Read more: www.nwdocfinder.com/5733.

Savant Protection

Founded: 2004

CEO: Co-founder Ken Steinberg, formerly held senior positions at companies Digital Equipment, Hughes, Hitachi and the John Von Neumann Super Computing Center for the National Science Foundation

Funding: Not disclosed

Headquarters: Nashua, N.H.

What the company offers: Software for Windows and Linux servers and desktops to protect against malware by taking a cryptographic-based snapshot of applications so that unauthorized changes can't be made.

Why the company is worth watching: The approach could play a role in containing and mitigating the spread of malware infestations.

How the company got its start: Steinberg says he saw a basis for protecting software from malware with the so-called "sliding acoustical" signature he created for taking a digital fingerprint of a user's application.

Where the company got its name: "Savant" means a learned person or scholar.

Who uses the product: Connecticut River Bank, Neueon

Void Communications

Founded: 2005

CEO: Joseph Collins, who formerly founded his own company, Griffon Energy, which bought and sold gas stations.

Headquarters: New York

Funding: An undisclosed amount of seed funding from Aegis Holdings

What the company offers: What's more secure than e-mail that doesn't leave a trace? VaporStream is a Web-based service that lets two parties communicate with their standard e-mail addresses; the message is transmitted as an encrypted image, and browsers on each end are instructed not to cache it, so there is no record. Instead of jumping through all sorts of technical hoops to secure e-mail communications, the service simply vaporizes them. "You can trust that once you read a message it is gone," boasts the company Web site.

Why the company is worth watching: Void is attempting to bring privacy back to electronic communications. The security that VaporStream offers represents a breakthrough in simplicity — sorely needed in the realm of security technology — but the company may have a tough time convincing enterprises that making e-mails disappear is the best way to communicate. Most likely the service will find niche markets that can take advantage of this simplicity without being concerned about the consequences associated with not archiving an e-mail message.

How the company got its start: Collins, looking to reestablish privacy and confidentiality in workplace communications, teamed with technologist and friend Amit Shah.

Where the company got its name: The founders believed there were gaps or voids in the world of communications and felt they could fill those voids.

Who uses the product: Currently, consumers. Void is working on an enterprise version of VaporStream, as well as versions for BlackBerrys and Windows Mobile devices.

Read more: www.nwdocfinder.com/5734.

Yoggie Security Systems

Founded: 2005

CEO: Shlomo Touboul, founder and CEO of Shany Computers, Finjan Software, Runway Telecom and Runway Telecom Venture Partners

Funding: In May received $1.8 million in first round of venture capital

Headquarters: Tel Aviv, Israel

What the company offers: Yoggie Gatekeeper, a gateway that protects laptops on the road so they're as secure as PCs in the corporate office.

Why the company is worth watching: Most mobile-client security measures require running several security applications and agents on the laptop, making them dependent on the security capabilities of the underlying Windows operating system. As a separate, inline appliance, Yoggie offloads the security software stack from the laptop and sidesteps Windows.

How the company got its start: Enterprise customers installed the content-security appliances from Touboul's previous start-up, Finjan, then asked, "So, now we have a great security solution for users within the corporate network, but what are we going to do with the traveling users connecting from elsewhere?" "I never had a real answer for this," he says. After leaving Finjan, he finally answered it with Yoggie Gatekeeper.

Where the company got its name: Touboul picked a made-up word that had the same sound in almost any language and was easy to remember.

Who uses the product: The product is scheduled to be available in November.

Read more: www.nwdocfinder.com/5735.

—Additional reporting by Tim Greene, John Cox and Deni Connor.

Next-generation WANs: no more tiers

EYE ON THE CARRIER
Johna Till Johnson

In case you missed the memo, MPLS now is the technology of choice for WAN underpinnings. More than half of the companies I work with on a regular basis say they're using MPLS or planning to in the near future — and that number increases dramatically among companies that are large (with more than $1 billion in annual revenue) and/or have global operations. That's why I've been spending the last few columns detailing best practices for migrating to an MPLS-based WAN, for those who are still in transition.

MPLS isn't the whole story, however. A less-obvious but fascinating corollary is the demise of the three-tiered architecture that dominated WANs from roughly 1995 until about last year. In case you've forgotten, here's how it worked: Tier 1 was the high-speed interconnects (ATM or dark fiber) linking data centers, contact centers and large headquarters facilities. Tier 2 was the core WAN architecture, typically frame relay, which connected larger sites with the majority of sites. Tier 3 was the mishmash of connectivity options (dial-up Internet VPN links, very-small-aperture terminals and so on) used to link remote and mobile sites into the core WAN.

What happened over the past few years is that data center consolidation, branch-office proliferation, the growth in broadband and the spread of MPLS have combined to fuse that tiered architecture into a much flatter design — one that relies on MPLS-based services to most sites in the network, from branch or remote offices to data centers.

Let's start with data center consolidation. As I've noted in previous columns, most companies have consolidated their data centers over the past 12 months — and most will continue to do so during the next 12 months. That means ultimately we'll arrive at an architecture based on two to four data centers linked by a range of high-speed network technologies. While dense wavelength division multiplexing over dark fiber is a common choice (and some companies are still using ATM) as a data center interconnection, companies increasingly are moving to high-speed (OC-1 or OC-3) MPLS-based services.

Not every company is jumping on the bandwagon of MPLS between data centers, however. Some high-end firms, such as financial services organizations, report that without a substantial number of branch offices to connect to, MPLS doesn't offer a price-performance advantage over, say, dark fiber.

Speaking of branch offices, I'm seeing roughly a 10% annual increase in the number of branch offices. That's a lot. The vast majority of these newer branch offices have broadband (T1 rates and faster) connections. That's a sea change from yesteryear, when branch offices typically were served by 56K to fractional-T1 connections. Once again, MPLS-based services (which, unlike frame relay, scale from T1 to OC-X speeds), are a perfect fit.

Finally, companies increasingly are moving to highly redundant Internet connections as a way to link their mobile users, business partners and customers. More on that development in a bit.

The bottom line? The old-school, three-tiered architecture is fading away, replaced by a flat MPLS mesh linking everything from data centers to branch offices.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

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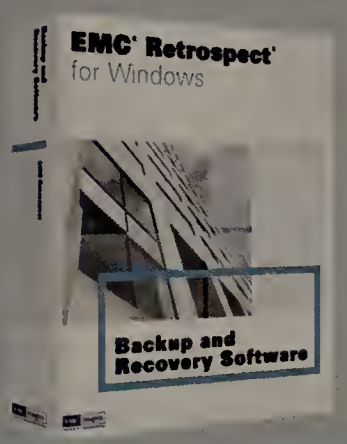

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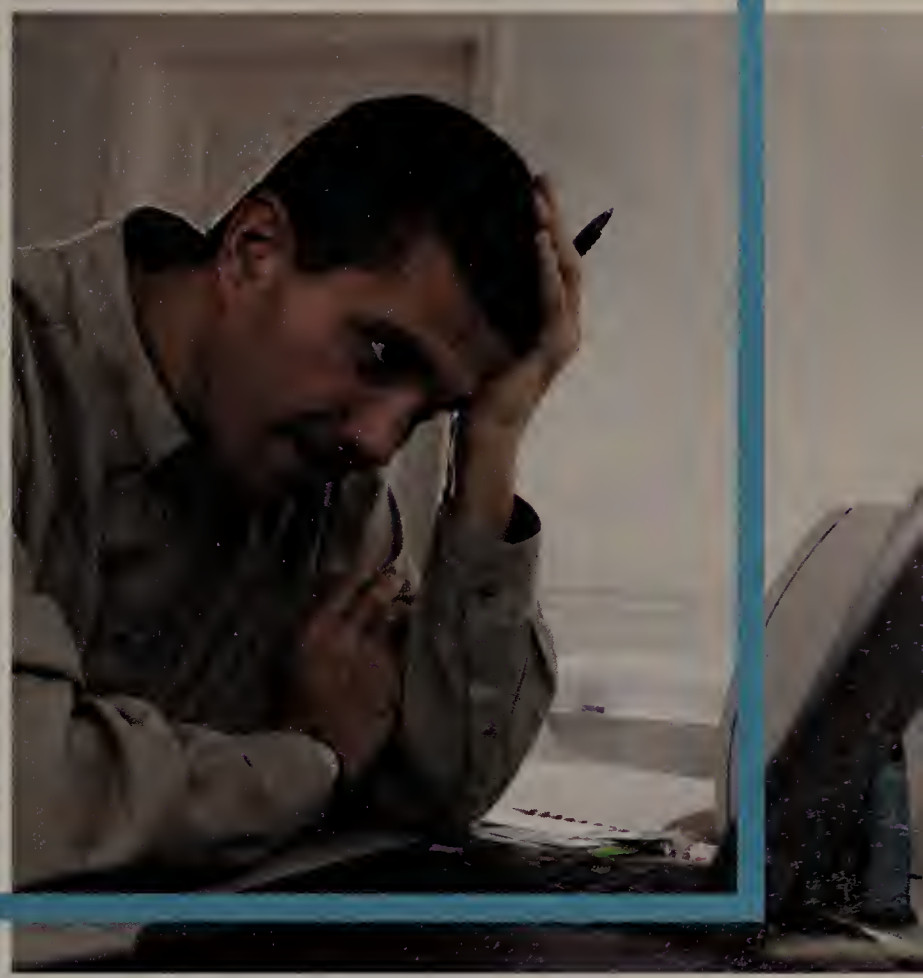

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TECHNOLOGY UPDATE

AN INSIDE LOOK AT TECHNOLOGIES AND STANDARDS

New approach to virtualizing x86s

BY CHRIS BARCLAY

Server virtualization is an approach by which processor architecture is virtualized to allow multiple operating systems to run in isolation on the same hardware. The software that provides this capability is often referred to as a virtual machine monitor or hypervisor.

There's a new approach to virtualizing the x86 processor architecture called native virtualization. Native virtualization leverages new hardware-assisted capabilities available in the latest processors from Intel and Advanced Micro Devices (AMD) to provide near-native performance.

Prior to these processors, the x86 architecture did not meet some fundamental requirements for virtualization, making it difficult to implement a VMM for this type of processor. These requirements include:

- Equivalence: A program running under the virtual machine should exhibit a behavior essentially identical to the original physical machine.
- Resource control: The virtual machine must be in complete control of the virtualized resources.
- Efficiency: The virtual machine should not significantly degrade workload performance.

Historically virtualization of the x86 architecture has been accomplished in two ways: through full virtualization or paravirtualization. Both create the illusion of physical hardware to achieve the goal of operating system independence from the hardware but present some trade-offs in performance and complexity.

Paravirtualization, as a technique for virtualizing x86 architecture, has primarily been used for university research. The research projects employ this technique to run modified versions of operating systems, for which source code is readily available (such as Linux and FreeBSD). Paravirtualization requires radical modifications of the operating system and therefore cannot support deployed operating systems. As a result, this approach cannot be seriously considered within a commercial environment.

Full virtualization is implemented in first-generation VMMs in use today. It relies on sophisticated, but fragile, software techniques to trap and virtualize the execution of certain sensitive, nonvirtualizable instructions in software via binary patching. With these techniques, critical instructions are discovered at run-time and replaced with a trap into the VMM to be emulated in software. These methods incur large performance overhead as compared with a virtual machine running on natively virtualized architectures such as the IBM System/370. This becomes a major problem in the area of system calls, interrupt virtualization and frequent access to the privileged resources. As a result, first-generation VMMs have been relegated to applications that are not mission critical and do not tax performance.

Recently Intel and AMD released processors with hardware-assisted virtualization support built in. With these new processor capabilities, the x86 architecture now meets the virtualization requirements stated above, making native virtualization a reality.

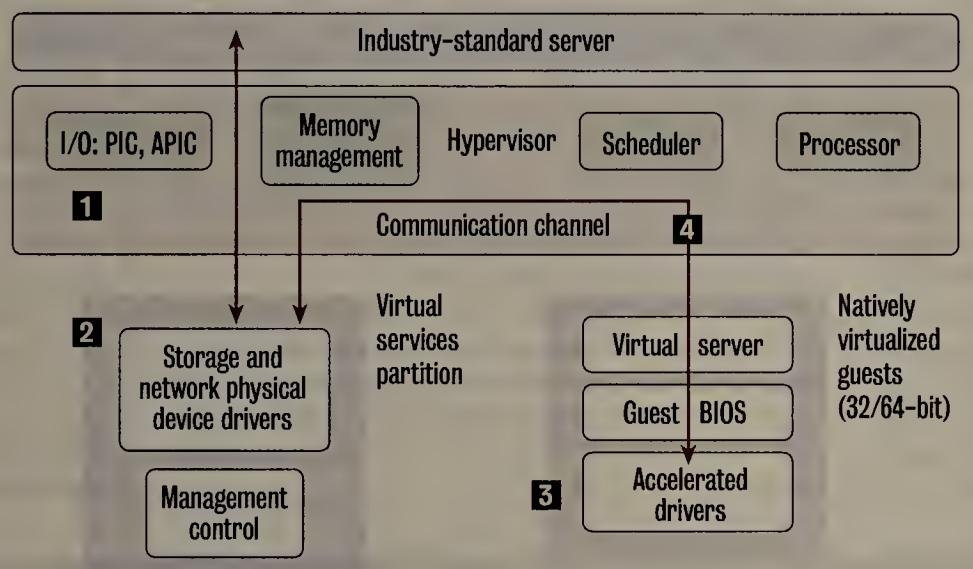
With native virtualization the VMM simulates the complete hardware, allowing an unmodified operating system for the same type of CPU to execute within the virtual machine container. With native virtualization, the VMM can efficiently virtualize the x86 instruction set by handling the sensitive, nonvirtualizable instructions using a classic trap-and-emulate model in hardware vs. software. It also uses performance analysis to selectively employ acceleration techniques for memory and I/O operations.

Native virtualization offers considerable benefit to users in performance and ease of implementation. It's worthy of consideration for those planning their next steps in server virtualization.

Barclay is the director of product management at Virtual Iron Software. He can be reached at cbarclay@virtualiron.com.

HOW IT WORKS: Native virtualization

Native virtualization accelerates virtual I/O.



1. The hypervisor boots on a processor with hardware-assisted virtualization.
2. The virtual services partition boots. It is a privileged guest and can access hardware directly.
3. A natively virtualized guest boots and starts executing in a virtual server container.
4. Based on performance the accelerated I/O drives are dynamically loaded and connected to the virtual services partition.

Ask Dr. Internet

By Steve Blass

Can you tell me if my older Web application pages will work with Internet Explorer Version 7, coming soon from Microsoft?

Microsoft has tentatively scheduled Internet Explorer 7 for release to the automatic update systems at the beginning of November. You can download the release candidate today (www.Microsoft.com/ie). Test your important Web pages and applications if you haven't started that process already. There are some noticeable differences in how Cascading Style Sheets, background images in tables and some dynamic content are handled. You will be asked to customize security settings when you first start Version 7. The new version supports tabbed browsing, and seems to load pages much quicker. I was pleasantly surprised at how fast one of our older Java applet pages loaded, and it works just the way it should in Version 7.

The browser will be offered as a high-priority update when it is deployed to Windows Update but will not automatically install itself. A local admin will have to accept the option to install the new version. Sites using Software Update Services, Windows Server Update Services or System Management Server will have complete control over Version 7 deployment — you can also use the Version 7 Blocker Kit (www.nwdocfinder.com/JDJD) to remove it from the high-priority update list. It will still be listed as an optional update and can still be manually installed.

Blass is an IT manager in Phoenix, and can be reached at dr.internet@jschnee.com.

More Web OSs and one in particular

GEARHEAD
INSIDE THE NETWORK MACHINE

Mark Gibbs

Last week (www.nwdocfinder.com/5739) we started to discuss Web operating systems (otherwise called Webtops). To briefly recap, these systems emulate a Windows multiapplication operating-system environment using AJAX or flash applications executing in a Web browser, sometimes with additional back-end processing handled by a remote server.

Web operating systems provide an infrastructure for managing Web applications, their active data and configurations, and their interaction with each other.

Webtops can run on any modern browser on any operating system, and because the user configuration is stored on a remote server, the Web operating system should run from anywhere.

We must mention that Web operating systems have nothing to do with WebOS, a research project started in 1996 at University of California, Berkeley. That project is described as: "WebOS provides basic operating systems services needed to build applications that are geographically distributed, highly available, incrementally scalable and dynamically reconfiguring."

WebOS paved the way for projects such as Legion (www.nwdocfinder.com/5741), "an object-based metasystems software project at the University of Virginia ... designed for a system of millions of hosts and trillions of objects tied together with high-speed links."

The Legion project was the foundation of the Centurion test bed (www.nwdocfinder.com/5742), which, according to its home page, can deliver more than 240GFlops using 384 processors (that's 0.625GFlops per processor).

Centurion has produced remarkable performance, such as 3.7GFlops using 49 nodes, or 0.0755GFlops per processor (www.nwdocfinder.com/5743). With an equipment cost of just $20,000, that equates to just $5,405 per GFlop.

You can, if you like, build your own Webtop.

Now we need to stop digressing.

An example of a current and useable Web operating system is the subject of the 800th issue of the "Network World on Web Applications" newsletter (www.nwdocfinder.com/5744). The issue contains a review of an interesting open source Web operating system project called eyeOS, which has a back-end written in PHP that creates a client-side Webtop and applications using AJAX.

You can, if you like, build your own Webtop. The foundation of a Webtop system requires a manager to create and manage windows in a browser display. Over the past few months a number of excellent products have appeared, and one that impressed us was Winlike from Ceiton technologies (www.winlike.net).

Winlike is a purely dynamic HTML-based system and remarkably only 27KB in size. It works with Microsoft Internet Explorer 5.5 or higher, Netscape Navigator 6.1 or higher and the Mozilla family of browsers (Mozilla 0.92, Firebird 0.7, Galeon, Avant, etc.) without plug-ins.

At the heart of Winlike is the Window-Manager, which manages the set of overlapping windows you want to use. The Window-Manager provides functions for creating, closing, moving and minimizing windows, and handles all the rendering issues of supporting overlapping windows.

Winlike includes an editor for configuring Winlike windows that generates the code to include in your Web pages. It includes an API so you can create anything from a simple multiple-window display to a complex, dynamic environment for dashboards.

We tried building a Winlike system with flash content generated by Crystal Excelsius (www.xcelsius.com), and it was ridiculously easy! Oh, the Web Applications newsletter also covered Xcelsius — (www.nwdocfinder.com/5745).

Winlike is free for noncommercial use and for development purposes. For a commercial Web site or Web application, a single server license is $80. Volume server licenses are also available.

Next week we have a two interesting commercial Web operating systems for your delectation. Until then, digress to gearhead@gibbs.com or on Gibbsblog.

CoolTools

Quick takes on high-tech toys. **Keith Shaw**

Are branded gadgets the new geek status symbol?

I'm having a hard time understanding the appeal of designer gadgets — have they become the new status symbol for the wealthy geek, or am I just too interested in tech features, speeds and feeds to give two hoots about what the device looks like or other special branding the device may have?

Two recent product announcements make me wonder. First, T-Mobile USA has partnered with fashion designer Diane von Furstenburg and street-wear maker Lifted Research Group (L-R-G) to make a couple of limited-edition T-Mobile Sidekick wireless e-mail devices. The devices have the same features as the Sidekick 3 and will be available in limited quantities at select T-Mobile retail stores starting Oct. 30.

T-Mobile says the Diane von Furstenburg version of the Sidekick will be "dressed in sleek black and feature Diane's signature hot-pink lips." The L-R-G version is designed with "traditional baby tree camouflage and customized with L-R-G's iconic imagery."

Do people really want a fashionable T-Mobile Sidekick?

Technical features on the device include a cell phone, support for three instant-messaging clients, personal e-mail and a Web browser. The devices support T-Mobile's Edge wireless network, and have a 1.3-megapixel digital camera, MP3 player, Bluetooth wireless and a trackball for easier navigation.

Acer America announced North American availability of its Ferrari 1000 and 5000 notebooks, which bring the latest performance features with the Ferrari brand of Formula One racing. The Ferrari 1000 notebook has the latest AMD Turion 64 X2 processors, a 12.1-inch CrystalBrite widescreen display (with ATI Radeon Xpress 1150 graphics chip set with 512MB of memory), integrated draft 802.11n wireless technology and Bluetooth 2.0 connectivity. The 1000 ($2,000) includes Acer's OrbiCam, a 1.3-megapixel Web camera positioned on the top of the LCD panel.

Acer America's Ferrari 5000 seems to scream performance.

The Ferrari 5000 ($2,300) has a 15.4-inch screen, 802.11a/b/g wireless, Bluetooth 2.0, Gigabit Ethernet port and a 160GB hard drive. It comes with an Acer Bluetooth VoIP phone, OrbiCam Web camera and videoconferencing software.

One thing I could get behind is device branding that supports a charitable cause. In conjunction with Red (created by U2 lead singer Bono and Bobby Shriver), which gets companies to create branded products to help in the fight against AIDS in Africa, Apple and Motorola have announced Red editions of their devices. The iPod nano Red Special Edition ($199, 4GB) comes in a red aluminum enclosure, and $10 from each sale goes to the Global Fund to help fight HIV/AIDS in Africa, Apple says. The company will also offer a $25 iTunes Red gift card next month.

Motorola and Sprint have also joined the cause, announcing the Red MotoRazr V3m cell phone. It includes access to Sprint TV, Sprint Movies, NFL Mobile and Sprint Music Store, and has a 1.3-megapixel digital camera, GPS support, MicroSD memory card slot, speaker phone and Bluetooth wireless. The Red version of the MotoRazr will cost $305, or $65 with a two-year agreement and rebates. Motorola and Sprint say they will contribute directly to the Global Fund with each Red MotoRazr sold.

Shaw can be reached at kshaw@nww.com. New Cool Tools video every Thursday, and Twisted Pair podcast every Friday at www.networkworld.com.

E-MAIL NEWSLETTER SHOWCASE:
WIRELESS IN THE ENTERPRISE

The 'gotcha' in automating rogue containment

BY JOANIE WEXLER

For optimum security and scalability, it's desirable to automate the process of disabling rogue Wi-Fi devices discovered by your wireless intrusion detection/prevention system. However, you also must avoid unlawful disruption of other operators' Wi-Fi networks. Striking a balance can be tricky, particularly in multi-tenant office buildings and other crowded environments.

For example, many WIDPs have the ability to identify what your corporate policy deems a rogue and automatically disable it. However, depending on how smart your WIDP is, entirely automating this process could shut down a legitimate access point in a neighboring network.

Because Wi-Fi runs in unlicensed spectra, with equal access afforded to all network operators, the FCC says you could be legally responsible if you knowingly infringe on someone else's network. So how your company defines a rogue is important. Are all unauthorized access points rogues, for example? Or should the definition be reserved for unauthorized access points that are plugged into an Ethernet port in your wired network? Some WIDPs can tell if the access point is connected; others can't.

The University of Portland learned this when it built its first official campuswide wireless LAN (WLAN) last year. It operates two Cisco 4400 WLAN controllers and about 85 Cisco lightweight access points. The school uses the Cisco centralized Wireless Control System (WCS) for intrusion prevention and other radio frequency capabilities.

Initially the system was configured to automatically disassociate access points that the WCS identified as rogue, says Bryon Fessler, the university's vice president for information services and CIO.

However, the WCS system classifies any unauthorized access point as rogue, regardless of whether it is connected to the wired network. So nearby business and residential access points were at risk for getting shut down by the school's WCS.

As a result, Fessler says, Cisco changed the WCS design such that a warning appears on the WCS management screen and asks the administrator whether to proceed with the disablement. Alerts like these in the WCS and other WIDP systems helps to keep us from intruding on other networks.

On the other hand, having to "yay" or "nay" the disablement decision with the discovery of every unauthorized device makes the process much more manual, Fessler says. "And on a campus, we deal with lots and lots of rogues," he says.

Wexler is an independent networking technology writer/editor. She can be reached at joanie@jwexler.com.

In Their WORDS

Vendor Solutions for Your IT Challenges

COMPANY: Netcordia

OVERVIEW: Founded in 2000, Netcordia develops NetMRI, an automated Best Practices based network management appliance. NetMRI is the most comprehensive, fully integrated network diagnostic tool for enterprise and government networks. This plug and play unit allows a network engineer to easily and quickly identify issues with respect to VoIP, configuration compliance, VLAN, and IP within the network.

CHALLENGE: As technology is becoming an integral part of everyday business, enterprises are placing more rigorous demands on their networks, expecting high reliability, rapid response time, consistency and compliance. These demands have network engineers searching for a way to proactively and cost-effectively manage the network infrastructure without utilizing too much staff time and energy.

SOLUTION: Netcordia provides the solution with NetMRI, an award-winning network analysis appliance that goes beyond reporting to provide analysis based upon expert rules and best practices. With NetMRI, network managers can optimize their networks, pinpointing and solving present and potential hot spots. What may have previously taken numerous IT professionals hundreds of hours to uncover, a single NetMRI unit now easily finds in minutes.

Monitoring and network management tools typically capture statistics from interfaces, links and protocols, draw maps and graphs and send real time alerts about fault conditions. NetMRI correlates the statistics and applies rules of logic for troubleshooting in a useful browser-based view or report. NetMRI takes the next step with its configuration capabilities that allow customers to automatically fix problems, and create their own custom best practices. NetMRI establishes accuracy, integrity and reliability in significantly less time than legacy offerings.

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COMPANY: The Siemon Company™

OVERVIEW: Established in 1903, Siemon™ specializes in the manufacture and innovation of high-performance network cabling solutions. One of only three network cabling companies with true global capabilities, Siemon offers the most comprehensive suite of copper and fiber cabling systems available. With over 400 active patents specific to structured cabling, Siemon Labs™ invests heavily in R&D and industry standards, underlining the company's long-term commitment to its customers and the industry.

CHALLENGE: According to the London Metal Exchange, the price of copper has tripled in the past four years, rising over 59% between January and May of 2006 alone. With copper prices soaring globally and showing little signs of stabilizing, network cabling companies have been forced to adjust copper cable pricing accordingly.

SOLUTION: Through the standards-accepted practice of cable sharing, Siemon's fully-shielded category 7/class F TERA® cabling system allows up to 4 applications to run over a single cable, potentially reducing the number of copper cabling channels. By virtue of individually foil-wrapped pairs and overall screen, S/FTP cable allows multiple applications to run without internal interference.

S/FTP cable construction is further supported by the TERA 4-quandrant isolated outlet which can be easily terminated in less than 3 minutes. Fitting within a standard RJ footprint, the combination of the TERA outlet and TERA to RJ patch cords allows simple facilitation of cable sharing. As with traditional cabling channels, all four pairs of each cable are terminated in a single outlet. However, unlike an RJ interface, the TERA outlet can support up to 4 one-pair cords, 2 two-pair cords or a combination of the two, without the need for additional splitters or adapters.

Depending on the applications, a single TERA cable can replace up to 4 copper channels. With copper prices significantly raising the cost of cable, this reduction in total cable runs can provide an immediate cost benefit.

Siemon's in-depth whitepaper detailing the practice of cable sharing is available online at **www.siemon.com** or at **www.networkworld.com**.

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On Technology
John Dix

The benefits of thin clients

What do you do when two-thirds of your company's employees work in remote locations that don't have IT support?

Bring all the complex stuff back into the data center where you can control it, says Jack Wilson, enterprise architect at Amerisure, a property and casualty mutual insurance company in Farmington Hills, Mich.

Even the desktops. None of the PCs used by Amerisure's 800 employees were managed or locked down when Wilson was hired two years ago, making those resources hard to manage. Compounding the problem: 450 of the company's workers are in eight remote locations.

Users could load anything they wanted, which, combined with the usual mix of disk and power failures, added up to a constant headache, Wilson says. Worse still, the company had to rely on third-party support, so it would take anywhere from two hours to a full day to resolve outages.

To reclaim control Wilson installed Wyse thin clients on remote desktops, a Dell blade server at headquarters and Citrix software to bridge the two.

The thin clients, which don't have disks, run a stripped-down version of Linux that allows network connections and supports a browser. Each blade can support 45 to 60 sessions, everything from Outlook and Word to 3270 emulation. "We publish a desktop that looks like a PC," Wilson says. "All the user's apps are available."

The benefits so far:

- The company can update all software at once.
- Users can't load software, so the company is left with a standard set of tools that are easier to maintain and the environment has become more stable.
- Help desk calls are down 35% to 40%.
- Some applications run faster now because the architecture eliminated some database activity across the WAN.
- Amerisure can step off the PC-upgrade treadmill. "The thin client costs $230, and when you add the cost of Citrix and the blade servers, you get up to just less than the cost to upgrade a PC," Wilson says. "But you have to upgrade PCs every three years, which cost us just about $1 million. We'll go one or two refresh cycles without having to do anything."
- Business continuity planning is easier because the company no longer has to maintain spare PCs with the latest image in case a location is rendered uninhabitable. "Now we just need to send out thin clients and people can get back to work anywhere there is Internet connectivity," he says.

The remote locations have been upgraded with nary a whimper, Wilson says, maybe because users' old 17-inch CRTs were replaced with 19-inch flat screens. Headquarters is next.

— John Dix
Editor in chief
jdix@nww.com

Opinions

You get what you pay for

Regarding "Help wanted" (www.nwdocfinder.com/5726): I'm a senior systems administrator with a programming and infrastructure background (mainframe, midrange and PC). I have several certifications, am president of a peer-to-peer IT group and sit on the board of a technology council. I just do not see the jobs that these CIOs are saying they have. The job openings I have seen — well, the companies do not want to pay. They want the talent, and they want it cheap. I've witnessed the outsourcing of work and positions to overseas companies and seen the failures that result. These CIOs should advertise their positions, be willing to pay and trust that a qualified American technology professional will adjust to the position and produce. I understand the current trend is to produce something to the business units every three months, but I don't see that happening with H1-B Visa candidates. There is a definite difference in the business philosophy overseas and in the United States. If these CIOs want to deliver service to their business units, they need to offer some decent salaries and be willing to let the highly skilled American technologist take the job.

A great example is the so-called shortage of mainframe systems programmers. One would think the salaries would be skyrocketing. But I see the positions going unfilled, waiting to be outsourced (or to go to a H1-B Visa holder) in lieu of paying an American a higher wage to learn on the job or use skills that he has for that job.

David DeWall
Senior systems administrator
Erie Indemnity Co.
Erie, Pa.

Every time I read an article about the shortage of skilled IT workers in which companies claim they can't find IT employees with business skills, I want to scream. I hold a degree in business and a master's degree in management. I was a successful entrepreneur before entering IT. I've been in IT for almost nine years and have enough IT certifications to cover a large wall, including a Certified Information Systems Security Professional (CISSP). Yet companies and recruiters want to know only about my technical skills.

Shortly after earning my CISSP, I met with a recruiter for a prestigious IT recruiting firm in Atlanta. After looking at my résumé, the recruiter commented that he had never seen anyone with both IT and business backgrounds. After concentrating entirely on my technical skills during the meeting, he said, "I have no idea how to market you." I have not heard from him or his firm since.

Jon Banks
Powder Springs, Ga.

I'm pleased to see that a representative of the Society for Information Management (SIM) recommends hiring entry-level IT people. I just read a SIM-sponsored research report that says many companies eschew entry-level people because they offer only skills that are easily obtained from outsourcers. For example, why do you need an in-house help desk? Pay for that service from someone else. The problem is, this removes an opportunity to bring in new people who need to learn your business from the bottom up. Without them, five years from now you will not have the seasoned worker you need.

Linda Musthaler
Principal analyst
Essential Solutions
Houston

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

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USER VIEW
Chuck Yoke

Engineering, finance are no longer separate

During the 22 years I've been in technology, I have worked with and managed some of the most intelligent and technically astute network engineers and architects. Their knowledge of network engineering and data communications far exceeded anything I ever knew. While I needed a subnet calculator, Cisco cheat sheets and *Newton's Telecom Dictionary* to design networks, these engineers casually discussed classless interdomain routing blocks, Open Shortest Path First route summarizations, and Border Gateway Protocol confederations. As I was skimming the daily comics over morning coffee, they were reading Radia Perlman's *Interconnections: Bridges and Routers* and arguing the intricacies of Spanning Tree Algorithms.

Yet for all their knowledge, many of these people could not accurately calculate equipment costs, implementation costs and total cost savings. A proposal for $250,000 in equipment that would generate $1 million in annual savings would ultimately cost $500,000 in equipment, implementation and migration costs with no cost savings in the first year, partial savings in the second and $1 million annual savings achieved only in the third. But by then, the equipment was outdated, and they needed another $250,000 — or $500,000 — to maintain the savings.

This was acceptable during the late 1990s, when technology was a business requirement and cost justification was a minor concern. The ability to do something faster was often justification in itself, and new equipment every two to three years was just a cost of doing business.

This changed when the Internet bubble burst in 2001. Technology went from a strategic requirement to an operational cost item in the budget.

> If you're an engineer, don't tell me you don't understand finance.

Most companies now require a real return on their technology investments. As a result, engineers need to be able to quantify the savings that new technology will generate. More important, they must accurately state when these savings will be realized. From a cash-flow basis, a $500,000 investment that generates a $1 million savings in the first year is very different from a $500,000 investment that generates no savings in that year and $2 million savings in the next.

If engineers want to be valued resources in today's business world, they need to understand financial concepts such as cost savings, cost avoidance and cash flow. They also need to be able to quantify the implementation costs that can affect savings. Items such as circuit overlap costs, installation charges, contractor costs, software licenses and maintenance fees need to be factored into the overall financial justification.

Finance departments can calculate equipment depreciation but are not always aware of the costs required to implement networks. Engineers know what is involved, and need to be able to quantify these costs and their impact on the savings timeline. And when issues arise that can increase these costs, engineers need to take the lead in resolving the problems and controlling the costs.

If you're an engineer, don't tell me you don't understand finance. I was reading "Peanuts" while you were reading about Ethernet's stochastic collision recovery. I was struggling to understand basic IP class addressing while you were discussing variable-bit subnet masks. If I can understand circuit overlap costs, you can, too.

Yoke is director of strategy and architecture for a global travel and real estate corporation. He can be reached at ckyoke@yahoo.com.

ON SECURITY
Winn Schwartau

On the road to operating system glasnost

What if they wrote an operating system and nobody logged on? In May 2005, I wrote a column called "Mad as hell, switching to Mac" (www.nwdocfinder.com/5272). A lot of folks got mad as hell at me, but not nearly as many as those who began migrating to the SOW — Something Other than Windows — operating system. My reasons for migrating my company (and friends, and clients) to OS X were based on security issues, from malware to availability.

Then along came Core Duo. Even Walter Mossberg, *The Wall Street Journal*'s geek curmudgeon, called the first generation of Apple-Intel gear the finest-engineered computer in the history of the universe (slight literary license). OS X was already considered a rock-solid platform, but with the migration to an Intel platform, suddenly the Mac was no longer just a Mac; it had entered mainstream consciousness.

Now along comes Vista. The bad news is that to take advantage of Vista's aero look/feel and other enhancements, some serious hardware is required. That's money. The bad news is that the reviews seem to agree: Vista is a nice, pleasant XP makeover, but is it worth the new software and licensing fees? That's money. The bad news is that Microsoft is trying to implement its own security. The European Union and top security firms are furious about the kernel lockout, thus allegedly keeping many third-party developers from offering Vista security products. The bad news is "who wants to migrate an enterprise to Version 1.0" of anything that can affect negatively operations and security because of unknown glitches we expect in first releases. The bad news is that Vista and the new Office are so different as to require additional employee training. That's money.

In addition, along comes virtualization. Virtualization software for running Windows on Linux and Macs from start-up Parallels is yet another major step toward complete operating system glasnost: the total openness of choice of operating system on single hardware platforms based on applications and operational needs rather than contrived functional availability.

Virtualization is perhaps the single greatest security tool of the third millennium. Consider this: Assuming you can budget new hardware for a pilot rollout, get Macs. Kill the old PCs (tax benefits?) and use the XP licenses on new partitions. Just for giggles (but not necessary), install Linspire Five-0. Cost: about the same as or less than a Vista-ready WinTel PC, and you get three distinct operating environments, each with its own pros and cons — such as security. Then, make four rules:

> What if they wrote an operating system and nobody logged on?

- Never touch the Internet with the Windows side of your Mac/Intel/Win/Linux/PC. You will achieve pretty decent Internet security from the Unix-based Mac/Linux side. A well-configured Google and open source desktop makes a fine additional layer of defense to Internet application server protection.
- Use only Mac Office or OpenOffice. Viruses and worms cannot (yet) migrate in OS X and Linux. Use that as a free security advantage. Are the apps 100% compatible? For superadvanced application use, this might not work. But it all is getting better.
- Use only browsers in the OS X and Linux partition. We generally don't care if home users who access our applications are PC, Mac or Linux. We shouldn't internally, either.
- Use only the PC/XP partition for those applications that absolutely must be Windows based.

What will you achieve? Operating system glasnost — the opening of the desktop to operate in any domain, with increased security, letting management have a wider range of application options. A platform you can tailor to your application needs across three environments, putting the choice back into the hands of management. (You will find that in many cases only one robust environment is needed, but it's nice to know you can do anything you want.) Cost reductions in security licensing and security application compatibility. Less reliance on the user to do things right. By removing the fertile agar environment of WinTel for all applications, the security risks will go way down.

Is this perfect? No. Is it a tradeoff? Sure. Is it doable? Yes. If you're looking for the Vista/OS X appearance (you gotta get new hardware anyway) and to lower costs and maintain existing architectures, give this pilot a try. Then let me know how it goes.

Schwartau is a security writer, lecturer and president of Interpact, a security awareness consulting firm. He can be reached at winn@thesecurityawarenesscompany.com.

Fake goods

Counterfeit

continued from page 1

What he didn't know was that phony network equipment had been quietly creeping into sales and distribution channels since early 2004, when manufacturers began seeing more returns, faster mean-time between failures and higher failure rates, says Nick Tidd, vice president of North American channels for 3Com and president of the Alliance for Gray Market and Counterfeit Abatement (AGMA).

Counterfeit gear has become a big problem that could put networks — and health and safety — at risk. "Nobody wants to say they've got counterfeit gear inside their enterprises that can all of a sudden stop working. But it's all over the place, just like pirated software is everywhere," says Sharon Mills, director of IT procurement organization Caucus.

There are no statistics specific to network hardware counterfeit rates. But according to a white paper by AGMA and consulting company KPMG, counterfeit products account for nearly 10% of the overall IT products market.

"That's $100 billion in fake memory sticks, drives, monitors, networking gear and other IT products floating around out there in black and gray market channels. This has huge implications for the enterprise," says Tidd, who became involved in his first counterfeit case in 2001. That case led him to a Canadian reseller who also was under investigation by HP. Out of that case, 3Com and HP, along with Cisco and Nortel, founded AGMA.

Vendors and resellers started seeing counterfeit in the gray market channel where used and refurbished products are sold, says Phillip Wright, director of worldwide brand protection for Cisco, which is the most counterfeited brand. That's when the supply of out-of-box secondhand equipment from the dot-com fallout dried up.

"Users got a taste for new used equipment at bargain prices. So counterfeiters moved in to meet the demand," Wright says. "It didn't help that some resellers turned a blind eye to possible counterfeit so they could keep their own revenue streams going."

The vast majority is still being purchased from gray market, uncertified resellers who unload their goods on eBay at extremely low prices, says Scott Augenbaum, supervisory special agent for the FBI Cybercrime Fraud unit in Washington, D.C.

These parts sometimes move sideways into the hands of legitimate resellers and integrators.

"Recently, I did some voice over IP integration for a client in Huntsville, and the engineer there asked if he could pay me with five extra VoIP network cards he had left over from the project," says Neal Rauhauser, founder of Layer 3 Arts, a system integrator in Omaha. "I got four cards I could use, and one that was counterfeit."

Fortunately, Rauhauser never installs anything before checking it first. He's wise to counterfeits, having had his first run-in with such products in 2004, when two of six new Cisco 1721 routers started acting up at one of his client sites, a large auto manufacturer in Michigan. They turned out to be counterfeit, and he has since been campaigning against counterfeit products.

There were visible differences between the counterfeit and the real gear, he says, but only after close inspection. The counterfeit VoIP card had a brand-new box even though the card was 4 years old. He also noticed discrepancies in packaging and labeling.

"The printing on the bar-code label was fuzzy like it'd been printed off a low-quality printer instead of a laser. And its internal packaging was a plastic bag instead of a plastic box like the others," Rauhauser says.

He contacted the customer who gave him the product, and the customer admitted he bought the cards off eBay. The four good cards came from a reputable seller. The bad card came from TFS Systems, which claims to be a Cisco registered reseller that buys only from Cisco's top-tier distributors. Rauhauser took pictures of the differences in products and called TFS to find how they wound up selling counterfeit product to his client.

"They were ready to pull my leg and tell me I was wrong. So I told them I was going to the FBI," Rauhauser says. "Then they asked me to box it up again, keep it pristine and they'll get me my money. I'm sure they sold it again on eBay right after they got it."

Many of the network wares sold on eBay are counterfeit, particularly if they're coming from China and are deeply discounted such as this listing. A small reseller would pay about $700 for the real deal.

In the MortgageIT case, Bruner figures his representative at Atec got burned when she went outside her normal supplier to purchase the cards in late 2004.

"We were notoriously cheap with our equipment purchases, so she might have bought from someone besides Ingram, her usual supplier, to get us a better bargain," says Bruner, who left MortgageIT in July, shortly after Deutsch Bank signed an agreement to buy the company.

How Atec came into possession of the counterfeit WAN interface cards can only be hypothesized because repeated calls and e-mail to Bruner's former representative at Atec, and to the company vice president, were not returned. The company's operations manager says MortgageIT was a big client, and sales representatives don't see the gear that's being shipped to their clients.

Gambling on quality

No matter how the counterfeits got into MortgateIT's authorized channel, such slippages highlight the complexities of dealing with this problem — not just in the sales and distribution channels, but also in the manufacturing supply chain, says Pete van de Gohm, director of IT security and quality at Bayer.

AGMA's Tidd acknowledges this, adding, "In some geographies, you've got resellers and distributors blending their inventories, which is why a single shipment might contain five good and five counterfeit parts."

It's difficult to control past the distributor layer, Tidd says, especially when Cisco has 28,000 registered resellers, 3Com has 3,000 and so on.

That means organizations face loss of equipment that vendors may or may not support (Cisco handles on a case-by-case basis). They also could experience critical network outages that, in the right circumstances, could affect human health and safety.

"What if it wasn't a bank subnet that went offline because of a faulty card in the router? What if it were an air-traffic control network instead?" van de Gohm asks. "This is no different than counterfeit medicine in the pharmaceutical industry. And it's potentially just as life-threatening."

Such concerns also grip the network vendors whose reputations and brands are at stake if they can't stop the dumping of counterfeit parts into the channel. "We worry about things like wiring in the motherboard overheating and the potential for network outages that would impact personal health and safety," Wright says.

Manufacturers are working on ways to make their products harder to clone through use of packaging labels, logos and three-dimensional holograms. Vendors such as 3Com are working on RFID tagging systems, and cryptographic machine authentication is a viable option to help devices call home.

For the past few years, Cisco and 3Com have been building anticounterfeit culture into every level of their product-to-market channels, educating suppliers and distributors about what they need to do to protect their own channels, while building international investigative teams to help law enforcement agencies shut counterfeiters down.

Cisco's 30 investigators stationed worldwide are dedicated to 200 active counterfeit cases at any given time. From the Mandarin characters on the back of his business card, it's clear that Wright spends a lot of time in China. And a whiteboard behind Wright's desk has a hand-drawn diagram titled "Stopping the counterfeit flow," which contains multiple loops back to Chinese distribution and law enforcement intervention points.

According to Wright and Tidd, China is the source for most counterfeit gear. Tidd toured multiple floors of counterfeit consumer electronics and network gear last year at a public shopping mall in Shenzhen, China.

Purchase protection

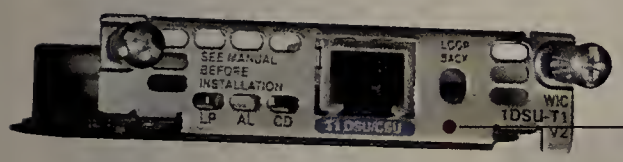
Many people don't realize they have counterfeit network equipment until it's installed and begins acting quirky or fails outright.

- Don't shop on eBay for deeply discounted gear, particularly from sellers in China.
- Don't go outside your trusted channel to buy critical network components.
- If you're in the market for refurbished gear, the safest bet is to purchase certified products through the manufacturer.
- Check serial numbers against the vendor database.
- Check the packaging carefully, inspecting for anything out of the ordinary in the logo, size and type of packaging materials by comparing them with others in the same shipment.
- Closely examine the gear and compare holograms and chip sets.

Can you spot the fake?

UNFORTUNATELY FOR IT BUYERS, clones and packaging of counterfeit gear are getting more realistic. Vendors would rather not share this information, because they believe it tips their hands to the bad guys. But resellers and buyers who are trying to stop the flow of fakes suggest looking for these subtle differences in packaging and equipment that could raise suspicions:

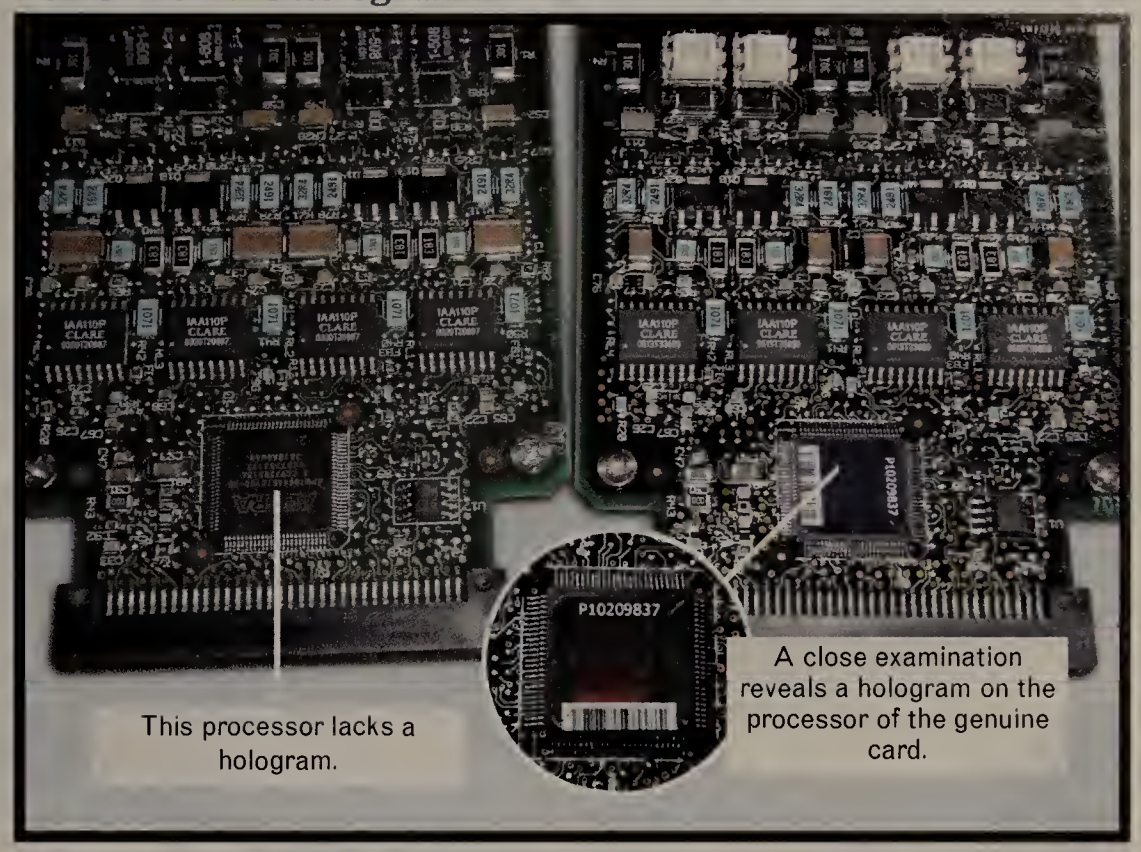
The writing on the WIC



The RJ-48 on the real WIC has "stewart" written on the inside. The external metal surface has a frosted texture.

The RJ-48 on this fake WIC has "GLG" written on the inside and small dots on the external surface simulate the texture of the authentic card.

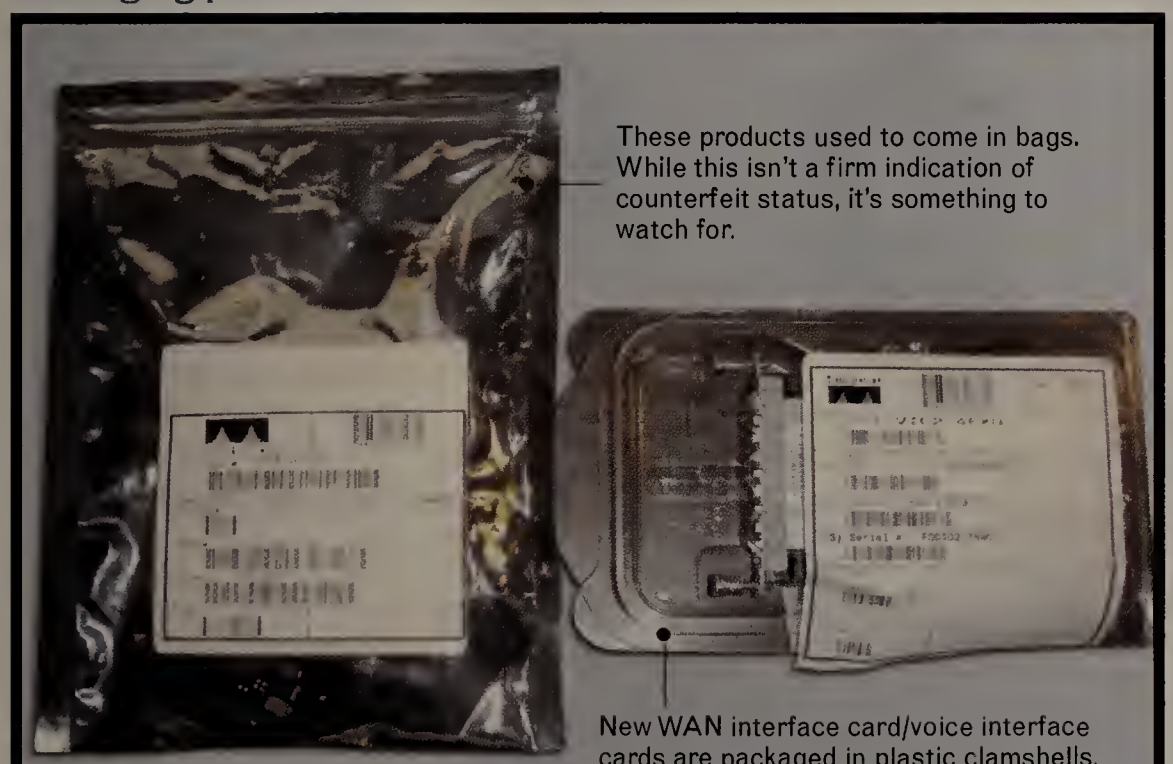
Home in on the hologram



This processor lacks a hologram.

A close examination reveals a hologram on the processor of the genuine card.

Packaging particulars



These products used to come in bags. While this isn't a firm indication of counterfeit status, it's something to watch for.

New WAN interface card/voice interface cards are packaged in plastic clamshells.

Thinking out of the box

The top box is made of thick, dark cardboard. Its label has thick, dark lines, and it has the tell-tale hologram. The bottom box looks and feels inexpensive, and the serial number datecode predates the release of the VIC2-4FXO.

Now you give it a shot
Which is the real deal?

The flat plain box is a fake, while the thicker, shorter box with the holographic Cisco globe sticker contains the genuine article.

SOURCE: JOE BRUNER, AFFIRMED SYSTEMS, AND NEAL RAUHAUSER, LAYER 3 ARTS

"3Com has done raids in China, cooperating with local law enforcement who've shut down factories and seized counterfeit goods. Once they've done the seizure, we go in and try to figure out how many boxed products went out before they were shut down," Tidd says. "Unfortunately, as fast as you shut the factories down, other factories go back up."

According to the AGMA study, the United States is the second major point of origin for counterfeit goods — California, in particular, say Rauhauser and Dana Andrews, owner of Digitial Surplus in Boston. They point to the port of Los Angeles as a big dumping ground for Chinese counterfeit parts and to Silicon Valley as a place of production.

Since 1994, Andrews has made a pastime of helping federal agents catch criminals he says are polluting the reseller channel and costing him his business. In February, he helped the FBI catch a fraudulent buyer who had set up a phony escrow company and tried to scam Andrews out of half a million dollars worth of Cisco gear.

While several law enforcement agencies contacted for this story won't talk about specific cases, a June raid on Sun Valley Technical Repair in Morgan Hill, Calif., could turn out to be a big case of counterfeit in Silicon Valley.

Reports in the *San Francisco Chronicle* made it appear at first like an immigration raid, as 12 illegal immigrants (11 from Mexico and one from Colombia) were taken away. But that wouldn't explain the presence of so many agencies, including the FBI, the U.S. Immigration and Customs Enforcement, the U.S. Postal Service and the Rapid Enforcement Allied Computer Team, which investigates large-scale, high-tech piracy and counterfeit cases.

Law enforcement efforts are helping to shut these factories down, say Tidd and Wright, who is active with Business Action to Stop Counterfeit and Piracy, which is sponsored by the International Chamber of Commerce.

H.R. 32, the Stop Counterfeiting in Manufactured Goods Act, signed by President Bush in March, should also make a strong deterrent, experts say. The act sets prison terms of as many as 20 years and fines of as much as $15 million for counterfeiting in what the International Anticounterfeiting Coalition praises as a direct response to "dangerous international counterfeiting problem that is threatening the U.S. economy, costing U.S. jobs and harming citizens."

Industry leaders need to do more to keep counterfeit out of the distribution channel, resellers and users say, before it affects public safety.

"The networking industry should reach out to other industries that have problems with counterfeit parts," van de Gohm adds. "The industry should apply the best practices already learned in the auto, pharmaceutical, airplane and other industries where counterfeit parts could result in loss of life."

Radcliff is a freelance writer. She can be reached at deb@radcliff.com.

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Cons: No CLI or Web management; performance issues with link aggregation.

The Breakdown

Throughput **15%**	**4.5**	**Scoring Key:**
Latency **15%**	**4.5**	**5:** Exceptional.
Address learning **15%**	**4.25**	**4:** Very good.
Link aggregation **15%**	**1.5**	**3:** Average.
Features **40%**	**2.5**	**2:** Below average.
Total score	**3.2**	**1:** Subpar or not available.

WideBand managed Ethernet switch: Affordable and fast

BY DAVID NEWMAN, NETWORK WORLD LAB ALLIANCE

Network managers driven by frugality, patriotism or both, might want to consider the WideBand WB28GMPRO, a low-cost managed Gigabit Ethernet switch made in the American heartland.

In a market awash in Layer-2 managed Ethernet switches, this device's key differentiator is its list price of $3,328. That's far less than prices for managed access switches from major vendors such as Cisco, Extreme and Foundry Networks, but higher than managed switches from Dell and HP. However, with 28 ports instead of the usual 24, WideBand's device offers higher port density.

WideBand says it gains a price advantage by manufacturing in Missouri, where labor costs are relatively low. Nearly all other network equipment is made in Asia, often through outsourcing to component assembly firms.

The WB28GMPRO performed well in some areas of our tests, while lacking polish in others. This is a fast switch, delivering line-rate throughput for all frame sizes in tests lasting 60 seconds, and near-line-rate throughput for tests lasting 300 seconds. Latency was in line with other low-cost gigabit switches we've tested.

On the downside, the switch's user interface is quite limited in terms of features supported, and we were unable to complete a test of link aggregation because of performance issues.

Switch setup is fast but not entirely straightforward. Most switches offer a command-line or Web interface, and usually both. In contrast, WideBand's Windows-based management software has a proprietary interface, accessible via serial or Ethernet ports.

That's where we hit our first snag: Software supplied with the switch would only communicate over a serial link attached to COM1 of a PC running Windows. That was a problem for us, because the machine we used for configuration allocated COM1 to an infrared port. Within a day, WideBand released an updated version of the management software that let us select serial ports.

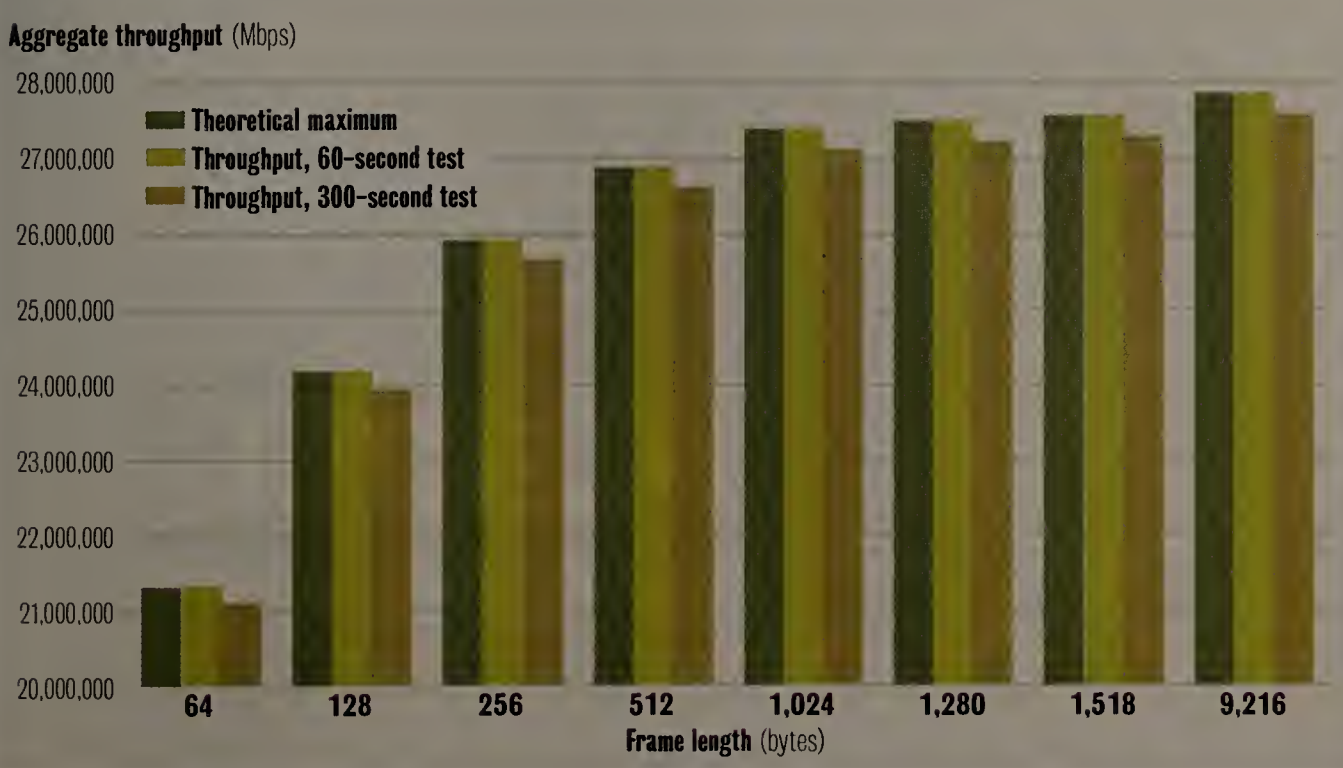
Even so, we'd be happier with a simple command-line interface (CLI) to the switch. A CLI also has the advantage of not requiring a given operating system or serial port. We'd be even happier if the switch management software supported Secure Shell for remote access.

The management interface is serviceable but limited compared with competing offerings. The interface displays information about port counters, virtual LAN (VLAN) assignment, SNMP and link aggregation. One notable feature is the switch's support for 4,094 VLAN IDs; many access switches support only a few hundred VLANs.

A port can be assigned to as many as four VLANs based on frame type, and that port will accept untagged traffic from each VLAN. The switch also will accept tagged frames, but managing trunk ports requires WideBand's nMU network management software, which we didn't test. We found a few other functions available only through nMU, such as jumbo frame configuration (though jumbo handling is enabled by default) and controlling address aging timers.

Figure 1: WideBand throughput

The 28-port WideBand WB28GMPRO turned in line-rate throughput results when we ran tests for 60 seconds. Throughput fell to 99% of line rate in tests lasting 300 seconds.



Performance measurements

In performance tests, we measured the WideBand switch in four areas: throughput, latency, address learning capacity and link aggregation (see "How we did it," page 39). We determined throughput and latency by attaching a Spirent TestCenter traffic generator/analyzer to all 28 ports of the switch and running TestCenter's RFC 2889 suite of switch tests.

It's common practice to run this type of test for 60 seconds, and here the WideBand switch was perfect. For every frame length, from the Ethernet minimum of 64 bytes all the way to 9,216-byte jumbo frames, the switch forwarded traffic at line rate without dropping a frame (see WideBand throughput chart, this page).

When we increased the test duration to 300 seconds — a practice increasingly used by service providers to model long-lived flows such as video feeds — the switch forwarded traffic without loss at a rate equivalent to 99% of line rate for all frame sizes.

The distinction between 99% and 100% of line rate is academic for most enterprise networks, where utilization is usually far lower. However, for applications that require zero frame loss, this isn't the right switch (or the right price range, for that matter).

We also measured switch latency, which was much

See WideBand, page 39

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WideBand

continued from page 37

higher in our 60-second tests than in our 300-second tests (see WideBand latency chart, www.nwdocfinder.com/5749). That's because throughput was lower in the 300-second tests, and standard testing practice is to measure latency at the throughput level. We should note that latency with this switch is comparable with that for other low-cost gigabit switches we've tested.

Latency at line rate may be much higher than at the 99% level, but that isn't necessarily a cause for concern. Delay introduced by the WideBand switch in any of our tests is unlikely to hamper application performance.

Congestion concerns

The one place where switch latency could be a concern is in congestion handling. At line rate, the lowest latency we recorded was 72 microsec with 64-byte frames. At gigabit line rate, that means there are more than 100 frames outstanding between transmitter and receiver at any one time. The loss of any one of those frames (perhaps because of congestion somewhere else in the network) could cause slowdowns for connection-oriented protocols such as TCP.

How we did it

We benchmarked switch performance in four areas: throughput, latency, address learning and link aggregation. For all tests, we used the Spirent TestCenter traffic-generation and -analysis tool and TestCenter's RFC 2889 software suite for switch testing.

In the throughput and latency tests, we offered traffic to all 28 ports in a bidirectional, fully meshed pattern, meaning we offered test traffic to all ports destined to all other ports. We measured throughput and latency for 60 and 300 seconds using a range of frame lengths from a minimum of 64 bytes to a maximum of 9,216 bytes.

In the address learning tests, we offered traffic to three pairs of ports at 1,000 frames per second, and used a seventh port to check for flooding.

In the link aggregation test, we created an eight-port link aggregation group on each of two switches, and attached another 16 ports on each switch to the Spirent TestCenter instrument. Our intent was to offer test traffic in a bidirectional, partially meshed pattern, meaning all traffic offered to each port was destined for all edge ports on the other switch. However, a flow control issue with the WideBand switch's firmware prevented us from completing this test.

In a test of learning media access control addresses — the maximum number of hosts a switch can see without flooding traffic — the switch learned 4,857 addresses. That's plenty for an access switch like this.

Link aggregation has long proven a sore point in switch testing, and unfortunately the WideBand device is no exception. We were unable to test the IEEE 802.3ae standard for aggregating multiple ports to appear as one virtual pipe.

During throughput tests, the switches kept dropping members of the link-aggregation group, and all tests failed from that point forward until we power-cycled the switches. WideBand reproduced the issue and corrected a flow-control issue in its firmware, but we were not able to verify the fix by press time.

We've noted performance problems with link aggregation before (see www.nwdocfinder.com/5722), often because of poor hashing algorithms in switches. That's one issue the WideBand switch doesn't have: Commendably, it offers users numerous hashing methods. While we weren't able to complete link aggregation testing because of the flow-control issue, we still appreciated the choice of hashing methods in the switch.

Deciding between a WideBand switch and the better-known competition is like the choice car buyers face when looking at U.S. and Japanese models. The imports offer plenty of creature comforts, usually at a price premium. Think Ford or Chevy when it comes to the WideBand switch: It's a decent performer with limited features, and it's less expensive than the imports.

Newman is president of Network Test, an independent engineering services firm in Westlake Village, Calif. He can be reached at dnewman@networktest.com.

Lab Alliance

■ Newman is also a member of the Network World Lab Alliance, a cooperative of the premier testers in the network industry, each bringing to bear years of practical experience on every test. For more Lab Alliance information, including what it takes to become a partner, go to www.networkworld.com/alliance. Other members: Mandy Andress, ArcSec; John Bass, Centennial Networking; Travis Berkley, University of Kansas; Jeffrey Fritz, University of California, San Francisco; James Gaskin, Gaskin Computing Services; Thomas Henderson, ExtremeLabs; Miercom, network consultancy and product test center; Christine Perey, Perey Research & Consulting; Barry Nance, independent consultant; Thomas Powell, PINT. Joel Snyder, Opus One; Rodney Thayer, Canola & Jones; Sam Stover, independent consultant

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The New Data Center

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Tom Nagy for The Highly Reliable Times

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Reliability Is Key in the "World's Capital Market"

By MICHAEL BETTENDORF

LONDON, Oct. 2006 — When an IT system must process 15 million real-time messages per day, with peaks at 2,000 messages per second, even one second of downtime counts. That's the pressure the London Stock Exchange faced when building Infolect, the Exchange's real-time stock-ticker information delivery system.

The solution had to have rock-solid reliability, nothing less. "Reliability is one of the key attributes of the Exchange in its technology systems. These systems have to work every day, 24/7, to make sure the markets are there," said CIO David Lester, who evaluated both Linux and Microsoft® Windows Server® 2003 for the Exchange's core technology systems. "We looked at a number of different platforms for our Technology Roadmap, and we lined up our business requirements with the capabilities of those platforms, and Windows Server was the clear choice."

In Lester's view, long-term reliability is a function of a solid relationship: "We wanted a deep partnership with an organization that could deliver the kind of mission-critical technology that we needed, and we felt Microsoft delivered just that."

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BREAKING NEWS: London Stock Exchange Achieves Record Reliability

London Stock Exchange CIO David Lester (above) cites Windows Server as key to maintaining system reliability and performance.

LESTER SPEAKS OUT:

"We looked at a number of different platforms for our Technology Roadmap, and we lined up our business requirements with the capabilities of those platforms, and Windows Server was the clear choice."

–David Lester, CIO, London Stock Exchange

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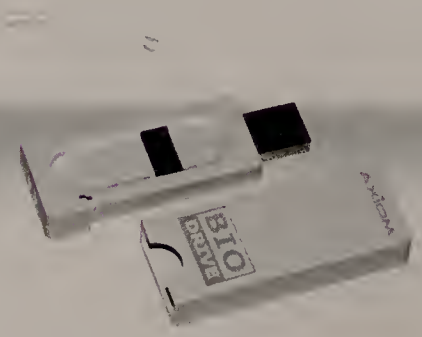

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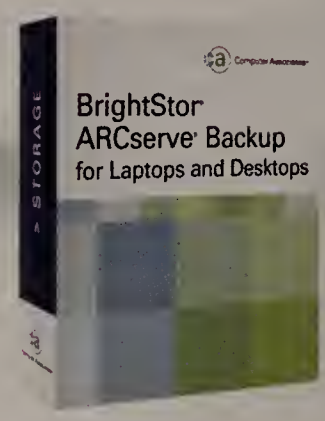

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The New Data Center

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Two lonely networks

Unified management of wired and wireless networks is the ideal — and a long way off.

BY ANN BEDNARZ

Faculty at the University of Moncton have a new way of keeping in touch with colleagues and students when they're roaming around campus: Wi-Fi phones that use the school's wireless network. The university, which is in Canada's New Brunswick province, had planned an IP telephony rollout after upgrading its wired network last summer. Adding a campuswide wireless LAN and using it to carry voice traffic was not part of the plan — it just seemed to fall in place, says Jocelyn Nadeau, IT director at the Edmundston campus.

"With the infrastructure we had, deploying wireless at the same time we deployed voice over IP just made sense," Nadeau says. For example, the upgrade included Power over Ethernet, so getting electricity to the wireless access points was simple. "We took a big project and made it bigger. But it all worked well."

Voice over Wi-Fi is among a handful of emerging applications that industry watchers say is helping to propel wireless from a conference-room convenience to a more pervasive, mission-critical technology for today's business environments (see "Wireless LANs not for all," page 68). As that happens, enterprises are becoming more aware of the challenges of managing wireless components.

"Wireless still really has a long way to go in terms of manageability and predictable behavior," says Paul DeBeasi, a senior analyst at the Burton Group. "There are rules for how you design and deploy a regular wired network, and if you follow the cookie-cutter rules, you'll have a stable, reliable, high-performance network. It's not like that with wireless."

The complexity of WLAN management

A wireless network's susceptibility to environmental conditions contributes to the complexity of managing it. To deal with the physical elements, enterprises often deploy dedicated tools, such as modeling and simulation software or radio frequency (RF) monitoring wares.

In addition, wireless network managers need operational software, which typically comes from their WLAN infrastructure vendor, to tackle such tasks as managing encryption keys, provisioning user access and keeping firmware up to date. On top of that an enterprise might run an overlay service, such as wireless intrusion prevention.

This all can add up to a sea of consoles — and that's just for the wireless side. Still elusive is the ability to manage wired and wireless networks from the same console, using the same techniques.

Configuration of wireless infrastructure and devices ultimately should be wrapped into larger network and systems management frameworks, says Rachna Ahlawat, a research director at Gartner. Vendors such as CA, HP and IBM have made progress letting their respective management platforms import data from WLAN management software, but that work has been more for the purposes of reporting than for taking management action. "They've just started scratching the surface," Ahlawat says.

Still, the tools available to help network executives manage WLANs are better than they used to be. In particular, vendors have shifted from autonomous access points to controller-based architectures that allow centralized management and configuration.

John Turner remembers when his team had to service access points individually. "If we wanted to change [a service set identifier] or update the code or add something, we had to go out and touch each of the access points individually," says Turner, director for networks and systems at Brandeis University in Waltham, Mass.

"I only have two people who do network management, for the wired and the wireless. When we had a dozen access points it wasn't so bad, when it was two dozen it was OK, but when it hit 36 it was ridiculous."

When Brandeis decided 18 months ago to blanket its 100-building campus with wireless access — a project requiring the deployment of more than 800 access points — Turner knew manageability had to be a top priority. The university chose Aruba Networks' gear.

Aruba espouses the idea of thin access points, managed by centralized controllers. The architecture lets Turner's team manage the wireless network from one location.

"We've done software upgrades on the Aruba system, we've made SSID changes, we've done a lot of different things here and there. It's a no-brainer. The access points are just the delivery mechanism. There isn't anything we have to do to them other than make sure they're plugged in," Turner says.

WLAN infrastructure vendors, such as Aruba, Cisco and Trapeze Networks, have done a good job of bolstering the management features in their product sets — but each vendor's software is designed to manage only its own infrastructure products, Ahlawat says. For heterogeneous environments, such vendors as AirWave Wireless and Wavelink offer specialized wireless-

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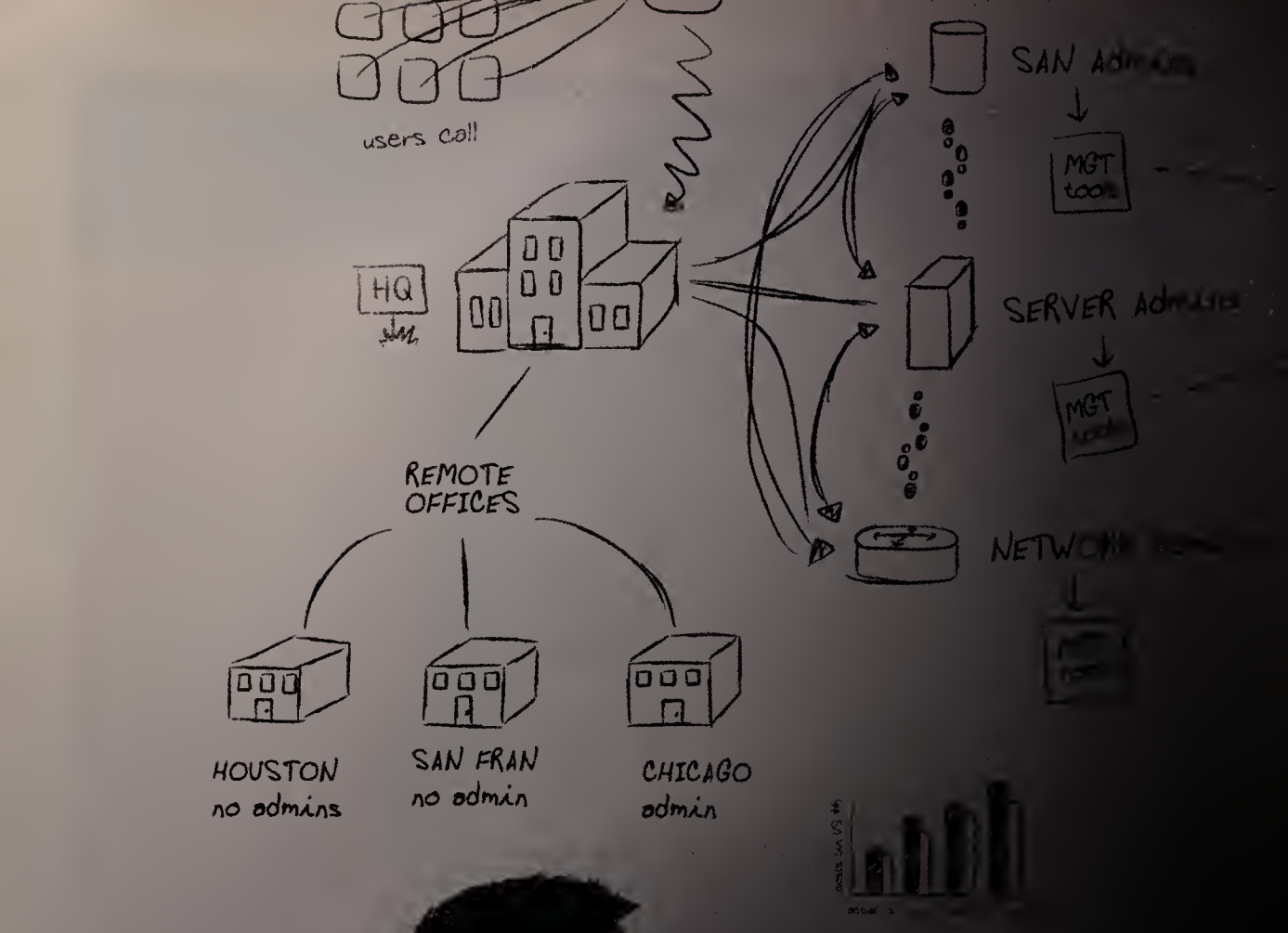

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Unified management

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network management software that lets enterprises manage several different makes of infrastructure products. "But there still isn't any vendor that can give me a solution for common wired and wireless. The vendors haven't made this a priority," she says.

WLAN management as art

If there's one reason management hasn't gotten a ton of attention from vendors and IT staff, it would be security. That issue traditionally has dominated wireless considerations, but as enterprises, vendors and service providers have become adept at addressing wireless security, priorities are beginning to shift. "As companies start to think about using wireless LANs in less casual deployments, for things like voice and location detection of tagged items, they're more concerned about reliability. It's an interesting shift in the last year," says Ellen Daley, a vice president at Forrester Research.

The vendors and service providers have addressed the science of security well, Ahlawat says. The pieces are available, enterprises just need to put it all together, she says. That's not the case with management, however. "Management is more of an art. You don't even know what the different pieces are, and how you put together your network management is going to be very company-specific," she says.

For WLAN management, the University of Moncton is turning to HP, which designed and implemented the school's Cisco-based wireless network. With the wireless infrastructure in place, Nadeau says now he's on the lookout for management efficiencies. "We're trying to look at solutions that would allow us to manage everything from a single point," he says.

One area on Nadeau's radar is access control. Today the university uses an open source wireless authentication client, SecureW2, to manage wireless access. The setup, however, requires students to bring in their laptops so IT can install and configure the client software. "If that load turns out to be as big as we think it will be, we will need to look at another solution," he says. "That's the next phase in our wireless project."

Analysts expect WLAN infrastructure vendors will continue to bolster their built-in management capabilities and begin to eliminate the need for third-party overlay services. For example, vendors are getting better at RF monitoring, Burton Group's DeBeasi says.

"There are separate companies selling devices to allow you to monitor what's happening on your wireless network on a physical layer, but they're not integrated into the management tools. Over the next two or three years . . . companies like Cisco and Aruba will be integrating those capabilities right into an access point," he says.

Tighter integration will reduce the number of consoles and increase functionality. For example, network managers should be able to take action automatically in response to environmental conditions, such as interference or an oversubscribed access point. "If you monitor in an integrated way, and you see a problem you can then use expert intelligence built into your controller to tell the access point, 'Do this.' If you have an overlay network, you can't take any action without involving a human being," DeBeasi says.

Bo Mendenhall, principal information-security architect at the University of Utah Health Sciences Center (UUHSC), has seen the beginning of such improvements. The Salt Lake City institution, an AirDefense customer, depends on the vendor's sensor-based security software to monitor its wireless landscape and detect rogue access points and suspicious traffic.

Four years ago, wireless access-point vendors weren't offering that kind of functionality. Lately that's been changing, Mendenhall says. For example, UUHSC is almost done upgrading its WLAN infrastructure with Aruba products, which include air monitors that perform functions similar to those of the AirDefense sensors. Mendenhall isn't ready to give up his AirDefense products but admits their functionality overlaps some with the Aruba systems. "But Aruba doesn't have the level of granularity that AirDefense gives us," Mendenhall says. "If we need more in-depth, forensic-type information, or more long-term trending information, we still look to AirDefense."

Mendenhall says he can envision the two vendors' functionality continuing to converge, but it could take a year or two. In the meantime, using the two systems in tandem lets UUHSC validate information. "If we see something in Aruba, we can go back into AirDefense and see if we see the same type of traffic pattern or attack. There are benefits to having both systems."

On the management front, the Aruba gear fits Mendenhall's desire for centralized WLAN handling. "I wanted one console for someone to be in on a daily basis, regularly looking for the operational as well as the security problems," Mendenhall says. One of the benefits is that all the logs are in one place, which makes it easier to troubleshoot problems, he says. With Aruba's centralized console, it takes just 1.25 full-time employees to manage UUHSC's wireless network, which has 500 access points and air monitors, he says.

Greatness to follow integration

Things eventually will get even better in terms of management for enterprises, experts say.

The elements are expected to come together, because it makes sense that they do, says Craig Mathias, principal at the Farpoint Group. "There's roughly 90% commonality between what goes on in a wired network and what goes on in a wireless network," he says. "It doesn't make sense to have two different directory services, two different security systems. Everything can be put in one place and centrally managed."

Enterprises will wind up with a single hierarchy of management tools that govern wired and wireless — even mobile devices — and those tools will be driven by policies, he predicts. "You'll say, 'This specific user has the following capabilities and this level of priority.' The network then just implements the policy."

Brandeis' Turner, for one, looks forward to that day: "I would love to have the same visibility into our wired network that we do into our wireless network." ■

WLAN management: The standards lineup

A trio of IEEE standards, in various states of completion, are designed to help improve enterprise management of wireless networks and devices.

- **802.11e**, an approved standard that defines a set of QoS enhancements for LAN applications.
- **802.11k**, a proposed standard for radio resource measurement that will provide client feedback to wireless LAN access points and switches.
- **802.11v**, a proposed standard that defines the procedures by which a wireless infrastructure controls parameters on wireless client adapters, such as identifying to which network or access point the adapter should connect.

The 802.11e standard, which is supported by products today, is particularly important for enterprises that want to run voice over Wi-Fi, says Paul DeBeasi, a senior analyst at the Burton Group.

Next up on the management standards front is 802.11k, which lets the network monitor what's happening on a laptop from a radio-frequency point of view, such as measuring signal quality. It will be a couple of years before 802.11v, which will let the network control user devices, is ironed out.

"When you have those two things — the k and the v — the wireless network can really then control what's happening on the laptop. It can tell the laptop, 'Don't connect here, connect over here. Don't use this channel, use that channel. Don't move now, but in two minutes move,'" DeBeasi says. Cellular networks work that way — a phone doesn't make decisions about what tower to connect to, the communications network does so that it can ensure a reliable, seamless handoff.

"That's how 802.11 is evolving with these new standards. The Wi-Fi network will become more like a cellular network, and when it does that, you'll be able to have much greater reliability, much more robust, predictable performance," DeBeasi says. "You'll be able to run mission-critical applications, such as voice, over the network and have very strong management capability built in," he says.

— A. Bednarz

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Craig Mathias, principal of the Farpoint Group, offers a guide to

Enterprise Wi-Fi

The number of enterprise Wi-Fi installations is growing, as systems based on centralized architectures proliferate, performance improves and costs decline. A particularly exciting trend is the introduction of unified wired-wireless switches.

Point-to-point microwave

This is used most commonly for bridging voice and data networks in buildings separated by a few miles or less, or for carrier bypass. Standardized interfaces make this a drop-in replacement for wire, allowing flexibility and easy integration.

Bluetooth headsets and wireless USB

Look in your average office cubicle today, and you'll find one or the other — or both — of these wireless gadgets.

Bluetooth is found most often in cell-phone headsets, but it also can be used for a wide variety of datacentric functions, including synchronization and file transfer.

The advent of radios based on very-high-throughput ultra-wideband (UWB) technology is resulting in products that implement the Universal Serial Bus 2.0 specification — but don't need a USB cable. Wireless USB is only one variant of UWB; also expect to see it in consumer electronics (for example, wireless video links) and used with Bluetooth's wide-ranging protocol stack.

Converged cellular and Wi-Fi

One of the most interesting developments in wireless today is the convergence of cellular and Wi-Fi technologies into an integrated voice-data offering. While many enterprises are waiting for cell operators to roll out services based on the Unlicensed Mobile Access or IP Multimedia Subsystem architectures, today companies can use premises equipment and appropriate software running on dual-mode (cellular and Wi-Fi) handsets to provide single-number access and PBX integration to reduce costs and improve productivity.

ZigBee

This short-range, low-power radio technology is suited especially for such sensor-based applications as monitoring, telemetry, control and automation. ZigBee nodes can be used to build complex meshes for commercial and industrial applications. Examples include logistics management, security, energy control, remote control, and location and tracking.

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Spotlight on wireless & mobility

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Cellular voice and data

Today cellular capacity is deployed on towers, and on microcells installed in such high-density facilities as convention centers and larger enterprises, to deliver effective throughput of as much as 1Mbps. Code Division Multiple Access (including 1xEV-DO for broadband data) and GSM/Universal Mobile Telecommunications System are the two major U.S. systems.

WiMAX

Current WiMAX deployments primarily follow the IEEE 802.16-2004 standard, which is used mostly to implement fixed, point-to-multipoint access services. The newer 802.16e-2005 standard adds mobility, and is directly comparable to broadband services on cellular networks. Mobile WiMAX is the first wide-area 4G technology, and will include wireless VoIP capability.

Hotel Wi-Fi

Many business travelers depend on their accommodations' Wi-Fi networks. As an alternative, some road warriors use cellular data PC cards, which, despite their monthly service charges, can be cost effective.

Push to talk

Modern digital PTT or P2T systems offer nationwide coverage and increasingly are implemented as IP traffic on top of cellular data services. PTT is especially valuable in field-based occupations, such as construction and real estate. PTT is half-duplex technology and requires a handset equipped with this capability.

Metro-scale Wi-Fi

More than 400 municipalities worldwide are examining or have deployed Wi-Fi services, often via low-cost wireless-mesh systems. Expect ubiquitous access over the next decade, and for throughput and reliability to advance dramatically, as products based on the IEEE 802.11n standard start to appear in late 2007.

Residential Wi-Fi

Many residential Wi-Fi products offer implementations based on the multiple-input multiple-output (MIMO) technology, which forms the core of the IEEE 802.11n standard. MIMO system performance is as much as five times that of most 802.11g-based products, with corresponding improvements in coverage and range.

Radio frequency identification

You can think of RFID as a radio version of bar codes. But RFID tags are pricier than bar codes, so for now they mostly track high-value items in manufacturing, healthcare, and, as here, logistics and transportation.

Spotlight on wireless & mobility

You want Wi-Fi with that?

McDonald's wireless network sizzles with thousands of consumer hot spots and juicy applications for franchisees.

BY SUSAN BREIDENBACH

There's something in the air at McDonald's these days, and it's not just the wafting scent of Big Macs and french fries. Wireless Internet access is on the menu in a growing number of locations as the world's largest fast-food restaurant chain seeks to give its famous Golden Arches a more digital flavor.

McDonald's is three years into its big Wi-Fi push, which so far has brought wireless connectivity to more than 7,500 of the company's 13,700 restaurants in the United States.

The Wi-Fi project is part of a huge re-imaging campaign McDonald's launched in 2003 to bolster its brand association, which had hit an all-time low. The nation faced an obesity epidemic, and some vocal critics and overweight customers were holding fast food in general — and McDonald's in particular — largely responsible for it.

McDonald's addressed the food issues by mixing salads and grilled chicken in with its traditional burger fare, but the company's much bigger challenge was a cultural shift into an increasingly intangible economy with its digital culture. Facing a world in which experiences are becoming as real and economically valuable as steel and automobiles — much less Quarter-Pounders with Cheese — McDonald's sees Wi-Fi as a way to add a fourth dimension — digital services — to its traditional offerings of food, convenience and price.

"People are using restaurants very differently these days as lifestyles have changed," says Tom Gergets, director of technology and infrastructure for McDonald's U.S. operations in Oak Brook, Ill. "We've really had to contemporize and create modern, relevant in-restaurant experiences."

In other words, McDonald's is trying to morph from a drive-through to a destination — a place where people go to meet and socialize or play, or even get some work-related e-mail done.

Becoming a destination involves quite a transformation. When the first Wi-Fi pilot started, 60% of McDonald's business was done at the drive-through window, and people who came inside only because the drive-through line was too long accounted for a big chunk of the remaining 40%.

Part of this transformation is happening through a major remodeling of sites that results in more comfortable seating, segmented areas for children, teens and

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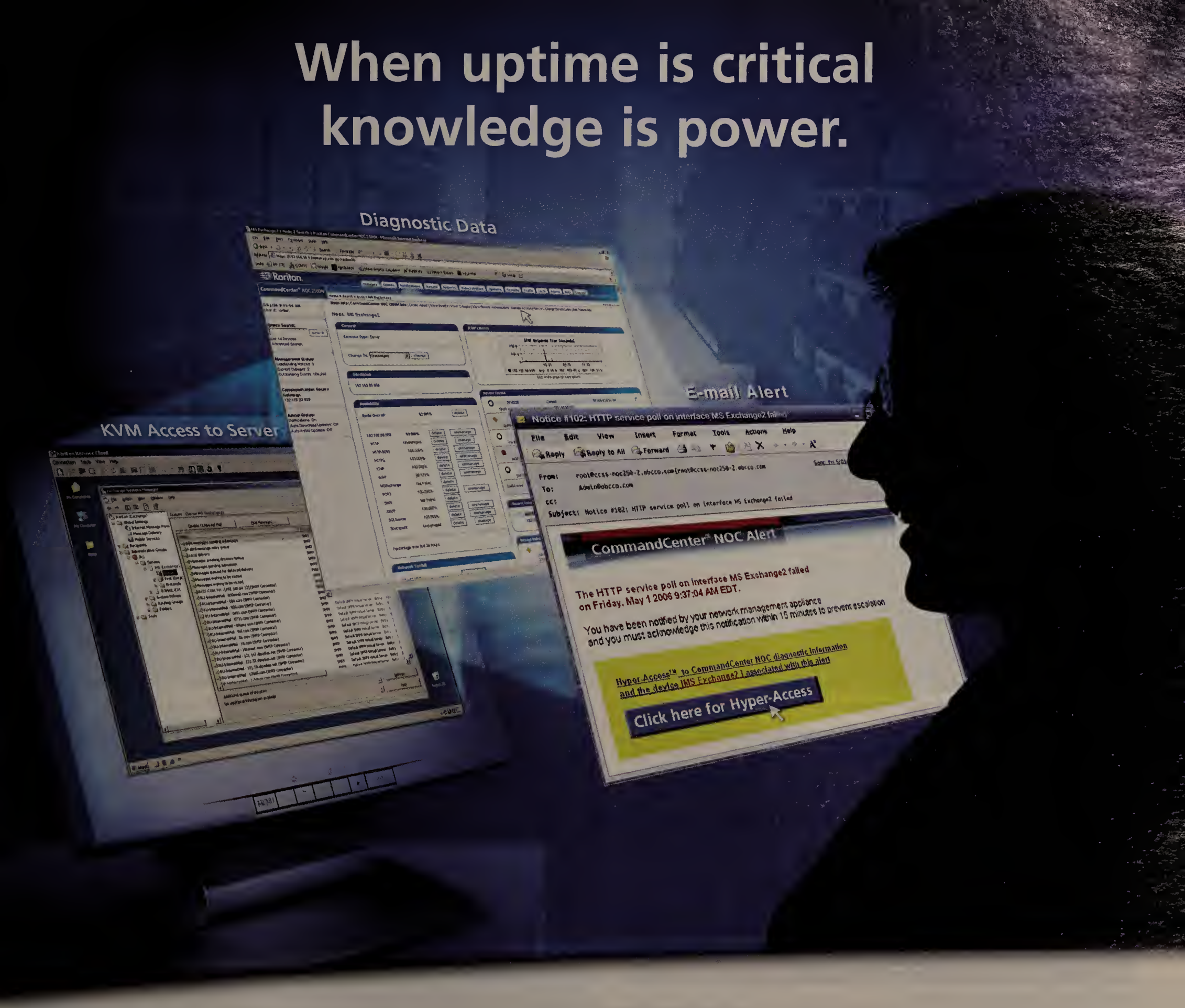

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McDonald's

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adults, better lighting and floors, and even an occasional fireplace. Even more is riding on a digital overhaul that provides state-of-the-art wireless technology.

Doing business in the experience economy

It's a tall order but a necessary one, says B. Joseph Pine, co-author of *The Experience Economy* and co-founder of business consultancy Strategic Horizons. "The key differentiator between offering a service and creating an experience is time. If you view spending time with your customers as costing you money, and your customers want to spend as little time as possible with you, you are becoming a commoditized service," he says.

"But if you view spending time with your customers as opportunities, and your customers love to spend more time with you, you can stage a valuable experience. And the more time they spend, the more money they spend — that's the basic strategy behind putting Wi-Fi in restaurants and other retail locations. McDonald's has created a venue where customers can come and have access to the experiences they want, when and how they want them," Pine says.

McDonald's began its Wi-Fi experiments with a few in-restaurant pilot installations based on a model that integrates value-added applications, such as e-mail access for customers, with core services, such as business applications for franchisees. Then came the challenge of implementing that model across an organization the size and scope of McDonald's.

In 2004, the company set out to test the concept and evaluate potential service partners in three metropolitan-area markets: Cometa Networks and AT&T in New York, Toshiba in Chicago, and Wayport in the San Francisco Bay area. It compared such criteria as business models, service levels, ability to attract customers and impact on core operations.

Wayport won a very public bake-off; third parties, such as AT&T and Nintendo, signed up; and McDonald's rapidly began deploying the service to restaurants. Today walk-up customers can pay $2.95 for two hours of wireless Internet access. Alternatively, customers can get unlimited-use of the entire Wayport network for $29.95 per month, or access via participating vendors, such as AT&T.

Nintendo DS users have given the network's Nintendo gaming utility rave reviews, and franchisees have begun enjoying the benefits of a major infrastructure upgrade that streamlined business operations.

The Wi-Fi service being sold to customers "is just a small part of the benefit," says Don Armstrong, a 27-year veteran of McDonald's franchisee team who has 11 restaurants in the Beaverton and Hillsboro areas of Oregon. "The real benefit was getting a high-speed infrastructure to access the business information we need to manage the restaurants better."

Armstrong is a member of McDonald's Store Technology Board, an elected group of franchisees that serves as a sounding board for the company's restaurant-systems development efforts. Board members are drawn from among the more technologically savvy franchisees, and yet the pre-Wayport network infrastructure in Armstrong's restaurants consisted of "just telephone lines and Sneakernet" — a fairly typical arrangement across all franchisee locations at the time.

The rollout was well underway by the time McDonald's celebrated its 50th birthday in 2005, but ongoing deployment of the Wayport Wi-Fi solution depends on franchisees' wishes and requirements, and may never reach 100%. Some 2,400 McDonald's restaurants are in locations that can get broadband access only via satellite connections, which do not support the Wi-Fi infrastructure.

Picking the right Wi-Fi provider

Considering the scale of the McDonald's Wi-Fi project — which is intended to bring wireless connectivity to thousands of restaurants — the cookie-cutter rollout has gone smoothly. The equipment is providing a flexible and secure foundation for public access and business transactions. Paramount was selecting the right service-provider partner, says Tom Gergets, director of technology and infrastructure for McDonald's U.S. operations in Oak Brook, Ill. He evaluated service providers on the following key attributes:

- **An appropriate service-level agreement and the ability to meet it.**
- **Great end-user support for the restaurant's customers, as well as its staff.**
- **A business model that supported a variety of services, including offerings from additional service providers.**

The bottom line, Gergets says, is that there is nothing all that different about deploying Wi-Fi: "People who understand technology deployment in a venue like ours, and have a good set of processes in place, are able to leverage the same skills for deploying wireless infrastructures."

—S. Breidenbach

Getting franchisees on board

Before its 2003 nadir, McDonald's had focused its growth efforts on adding new locations. Since then, its emphasis has shifted to building more sales at existing locations. The availability of wireless access is intended to attract more people to its restaurants and keep them there longer.

"We are starting to see people coming into the restaurants to get online and just buying a drink," says Allen Benton, a second-generation McDonald's franchisee with 18 locations in the greater Austin area.

These customers have lots of hot spots to choose from in such a technology-intensive area, so Benton woos them by providing coupons for free Wi-Fi access. "We want to be their convenient choice for Wi-Fi," he says. Employees are told to keep an eye peeled for laptops and pass out the coupons. Similarly, a big Nintendo tournament was aimed at the younger customers.

Technology changes, however, can't be forced on the 3,000-plus franchisees that own and operate some 85% of McDonald's U.S. restaurants. The McDonald's corporate group has to sell them on any new technology and convince them that its benefits fit their needs and outweigh the costs and risks involved.

Some franchisee cooperatives, which traditionally focus on purchasing and advertising, had dabbled in deploying technology before McDonald's Wi-Fi venture, but deployments were spotty and inconsistent. With the Wayport-based technology, McDonald's is offering a standard, turnkey Wi-Fi infrastructure all franchisees can use for back-office and customer-facing applications, as well as hot-spot Internet access.

"McDonald's is a bit of a consulting and sales organization for its franchisees," Gergets says. "We don't dictate technology to franchisees. Rather, we develop new services they can adopt." Armstrong acknowledges that adoption of the Wayport solution was "a big undertaking," but likened it to the installation of water and sewer lines: "Once they are in, the real work can begin," he says.

The other side of the hot spot

Inevitably, some franchisees have trouble seeing the value of the wireless experience to their customers. Traditional restaurateur thinking revolves around table turnover rather than encouraging customers to hang around. This newfangled fourth-dimension stuff could blow a winning business formula to smithereens.

A key driver of wireless at McDonald's, however, was the strong demand from franchisees with cash-only restaurants who wanted to start accepting credit and debit card payments from customers. That a way to do this could be overlaid on the Wi-Fi infrastructure got their attention very quickly. Although the customer-access side of the Wi-Fi implementation met with some skepticism, franchisees could see the immediate benefits of a flexible, high-speed network for their customer-facing and back-office applications.

"One of our goals was to ensure that the network could be used for multiple applications, and support new applications in the future," Gergets says. "The customers and employees can share the same infrastructure securely. We had to comply with the very high standards of the payment card industry, so we had to implement a very secure solution." Gergets declined to provide details, but said the services were audited by third-party entities.

The Wi-Fi infrastructure also allows rapid deployment of new tap-and-go-card payment technologies, including the Arch Card that McDonald's introduced last fall. Instead of a magnetic strip that has to be scanned and can become unreadable, the cards contain embedded RFID chips that transmit information more quickly and reliably. The point-of-sale solution is independent of the in-restaurant Wi-Fi network, but shares the Wayport connection for transport and authorization.

"We had wanted to take credit and debit card payments for a long time, and the Wayport infrastructure enables this," Armstrong says. The ability to pay electronically "brings new customers into the restaurants who might otherwise have gone elsewhere."

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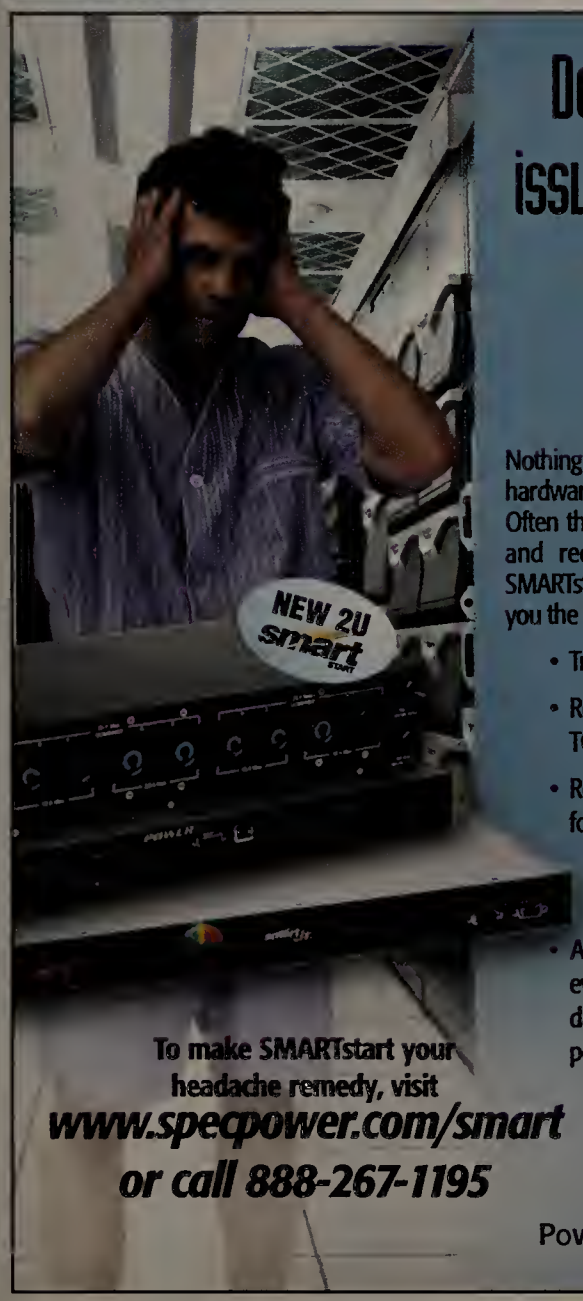

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McDonald's

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Faced with the technology expectations of his Austin-area customers, Benton already had implemented in-restaurant Wi-Fi access and electronic payments based on MegaPath Networks services. However, the MegaPath solution had no fallback capability when the broadband connection was down. Payment transactions had to be stored locally and uploaded when the connection was restored, resulting in losses for the restaurants when payments were refused. In contrast, Wayport offers dial backup.

Benton also uses the Wayport infrastructure to run specialized enterprise software that lets supervisors access and analyze business variables, such as daily sales and drive-through speeds.

McDonald's franchisees can deploy other applications on top of their Wi-Fi infrastructure: sales data reporting, IP telephony, kiosks, mobile-worker access, digital publications and e-learning. Armstrong's franchise operation is using the wireless network to deliver employee training and support video surveillance. If there is an incident in a McDonald's restaurant, management can access the location remotely and see what is going on.

The perfect venue

With its Wi-Fi project, McDonald's is trying to take that most recognizable of all corporate logos and influence people to associate it with interactive experiences that are useful, informative or just plain fun. Yet what Wi-Fi does for McDonald's, very well could be dwarfed by what Wi-Fi — and ubiquitous broadband wireless connectivity in general — get from McDonald's. After all, it's something of a maxim in the restaurant business that when McDonald's jumps on board something, it's officially a trend.

Consequently, some view the McDonald's Wi-Fi venture as an important way station on the road to pervasive connectivity. Truly pervasive connectivity requires that municipalities and service providers blanket communities with broadband wireless coverage, and that is still a lot more promise than reality.

"Eventually, McDonald's may be swamped by the fact that a service provider is delivering wireless access and just including McDonald's real estate because it is so ubiquitous," Pine says. As Wayport CEO Dave Fucina remarked when the Wayport-McDonald's partnership was announced in April 2004, "The broadband family needs a seamless extension of home and office connectivity, and McDonald's is the perfect venue to meet that need."

In the meantime, McDonald's is providing a point of access and showing customers — including a lot of young people who will be reshaping our culture — that they can get connected at a lot more places.

Breidenbach is a freelance technology writer based in Reno, Nev. She can be reached at sbreidenbach@usa.net.

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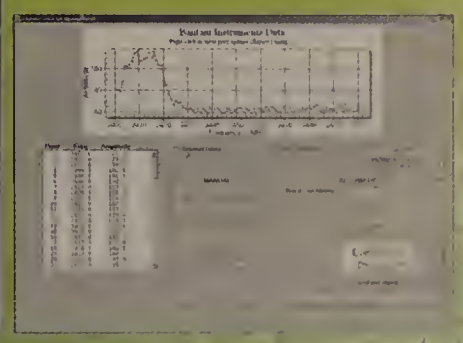

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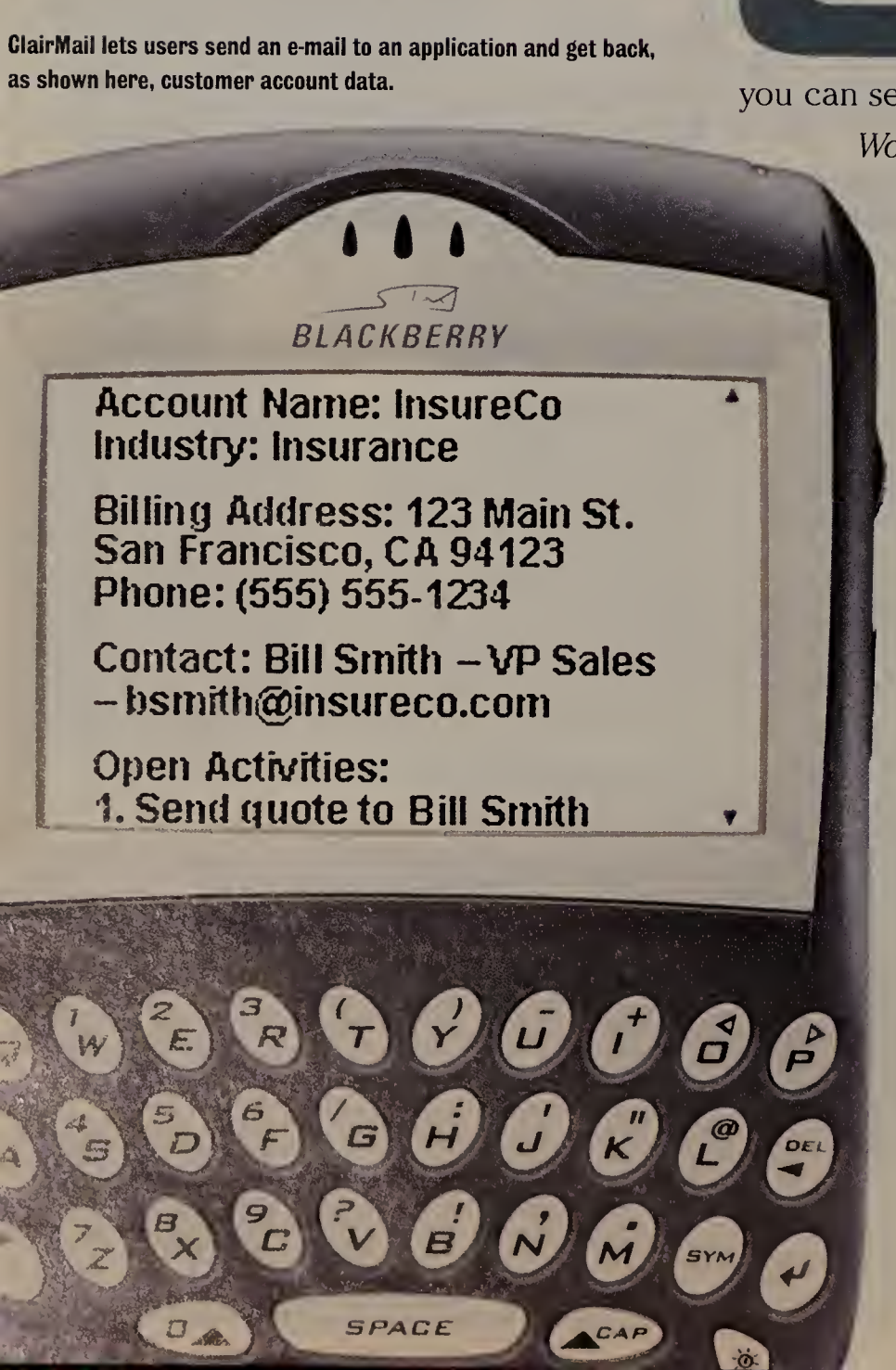
Spotlight on wireless & mobility

Hot apps and cool tools for the wireless enterprise

These six products get the thumbs-up for combining wow with workability.

BY JOHN COX

Streaming the latest "American Idol" performances to your cell phone might be pretty cool, but it's not going to help your company hit its quarterly numbers. For unwired enterprise users, hot applications and cool tools have to blend the "wow" factor with practicality and payoff. The cutting edge in technology is always fascinating, and you can see it at its best in our recent coverage of the Demo show, hosted by *Network World's* Events group (see www.nwdocfinder.com/5723). However, for your next-generation infrastructure, the New Data Center, we know that hot applications and cool tools for the unwired mean the ones that combine innovation with a track record of performance. Here are our picks.



ClairMail lets users send an e-mail to an application and get back, as shown here, customer account data.

Hot apps

Special delivery: enterprise data via e-mail
Company: ClairMail
Product: ClairMail

You're standing in front of an irate customer in his office, with your smart phone in hand, and you really need to know the details about his late order. Using your smart phone's e-mail program, you select an e-mail address, enter the customer's name on the subject line, and hit Send. In less than a minute, you have the data, pulled from your company's back-end CRM system.

With ClairMail's server software, you send e-mails from your address list not to colleagues but to enterprise databases and applications with one click. E-mail becomes an application interface.

It's addictive, too. Employees at J2K Technology, a Garden City, N.J., IT services company that advises customers on what products to buy, now use ClairMail routinely, even for Web searches, because it's so much faster and simpler than the BlackBerry Web browser, says Kevin Bock, J2K's president.

Users select CM Google from their address list, type in the search terms and e-mail it to ClairMail's hosted service, which runs the search and returns the results.

Rivals in this space include Sybase's iAnywhere group and Sendia, recently acquired by Salesforce.com.

As a hosted service, ClairMail is $5 per user, per month. As an in-house appliance behind the corporate firewall, pricing is $40 per user, per month.

Mobile applications made simple
Company: Dexterra
Product: Dexterra Concert Platform

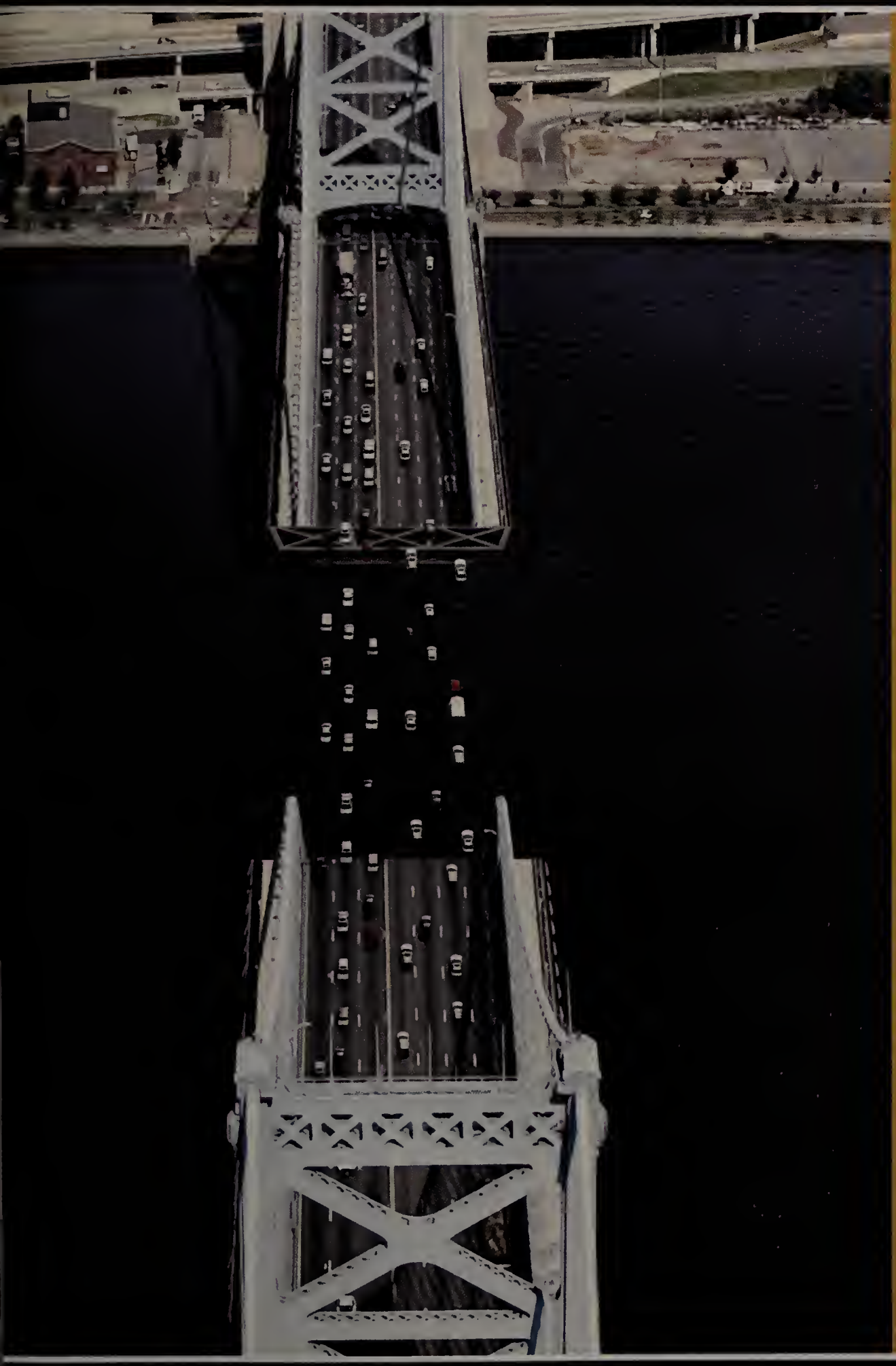
Dexterra Concert is middleware that users say dramatically simplifies building and deploying mobile applications.

With Dexterra Concert, application developers can focus entirely on creating the client application using existing Microsoft .Net or Java tools, along with reusable components from Dexterra. A metadata repository and interfaces do the heavy lifting for communications.

"You're completely eliminating the issues of synchronizing data, authentication and network communications," says Ron Fijalkowski, executive vice president for technology and central services at SDI, a Bristol, Pa., IT services com-

See Hot apps, page 64

HOW TO EXPECT THE UNEXPECTED



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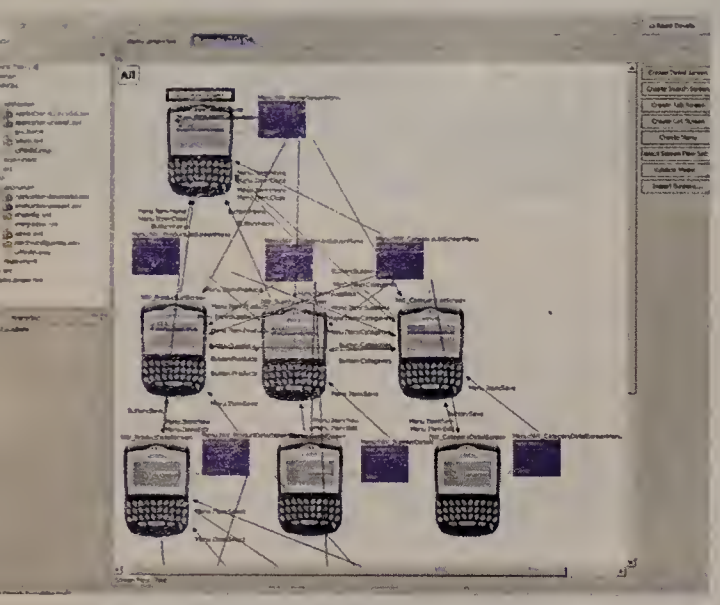


Dexterra's metadata repository and visual tool set simplify mobile application development.

Hot apps

continued from page 62

pany, an early Dexterra customer. "You just focus on creating the [client] business logic and forget about the infrastructure issues related to wireless."

Ready-to-use connectors link a Dexterra server to Microsoft SQL Server and Oracle and SAP applications. Dexterra also offers a set of applications built on the Concert platform, including asset management, field service and mobile workforce management.

Rivals in this space are numerous, including Intellisync, now part of Nokia, and Syclo.

Pricing is based on the complexity of the deployed application and the number of Dexterra components involved, such as the interfaces to SAP and Oracle. The price for a subscription license is $30 to $60 per user, per month. The price for the more traditional perpetual license is $200 to $900 per user.

Tracking movable gear

Company: PanGo Networks

Product: PanGo Locator with PanGo Active RFID Tags

Think about how much time and money are spent by staff at a sprawling medical center or a manufacturing plant just searching for the various pieces of portable equipment they need when they need them. Now think about looking at a computer screen, running a query and instantly finding the room where the gear you want is located. Now think about doing that with the wireless network you already have in place.

"It's cool to watch devices in motion in real time," says John Halamka, CIO for the Beth Israel Deaconess Medical Center in Boston. "You can view the location of equipment as it's moved from place to place."

He estimates the PanGo system is saving each nurse and doctor 20 minutes a day at the medical center. PanGo (named on *Network World's* 2004 list of start-ups to watch.) employs active radio tags, which use a 802.11b radio to transmit a signal that access points or special sensors pick up (conventional, supply-chain RFID tags use a different frequency and are passive — a reader beams a signal to the tag, which uses that energy to send a response).

The PanGo tags attach to equipment and even people. The PanGo server also can use location data from Cisco's 2700 Location Appliance and already established wireless LAN (WLAN) access points; it translates the raw data into coordinates and puts them on a floor plan or map.

A rapidly expanding group of companies offer location services technology. They fall into two broad groups. The first, including Radianse, RF Code and WhereNet, typically uses the unlicensed but lower-frequency spectrum. A newer group, including AeroScout, Ekahau and PanGo, base their products on the IEEE 802.11 WLAN standard.

For about $100,000, a customer can track 500 discrete assets, PanGo says. That investment includes PanGo Locator, the PanOS systems software and the radio tags.

Slap an active radio tag on such equipment as heart monitors and wheelchairs, then track and find them with PanGo Locator.

Cool tools

The world in your Palm

Company: Palm

Product: Palm Treo 700wx smart phone

What's cool? Palm's legendary usability with a wealth of Windows applications and tools and the speed of Evolution Data Optimized (EV-DO) cellular data services, all in a phone that really is smart.

The newly released 700wx, initially for Sprint Nextel's Power Vision Network, introduces the Windows Mobile Messaging and Security Feature Pack for the Windows Mobile 5.0 operating system. That means it supports certificate-based authentication for Exchange data and push e-mail (that is, automatic forwarding), and it lets network administrators wipe data from local or remote devices.

Coolest of all: a built-in interface to Sprint's Code Division Multiple Access EV-DO cellular network, which delivers typical downstream speeds of 400K to 700Kbps. (Sprint plans in early 2007 to launch EV-DO Revision A services, which could provide a peak data rate of 3.1Mbps downstream.)

Network World Cool Tools columnist Keith Shaw has an overview of the 700wx, though he hasn't yet taken it on the road (see www.nwdocfinder.com/5544). But earlier this year, he reviewed the 700w, the first Windows-powered Palm handheld, trying it out with an EV-DO card. "The Treo 700w is a great gadget; it works well with the EV-DO network, and would be a great tool for the enterprise mobile worker," he wrote (see www.nwdocfinder.com/5545).

Windows Mobile 5.0 and applications tie into Outlook, Exchange and other Microsoft applications. Users also benefit from a fast-growing and -maturing group of business-oriented applications. And Palm's expertise in usability tops off the list of this device's attractive features.

Competition is fierce: Motorola's recently released Q device, the Nokia E61 and more recent BlackBerry models all are targeted specifically at the enterprise.

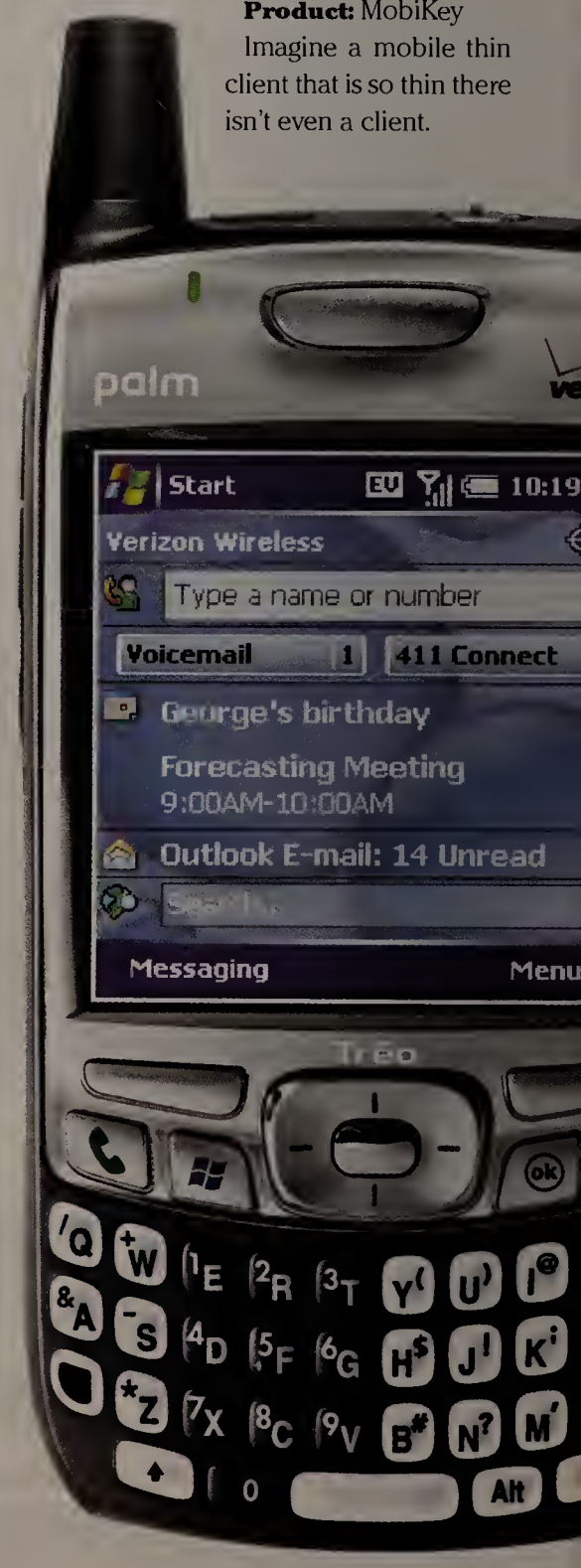
With a two-year cell contract, Sprint's price for the 700wx is $299 to $499. Without the contract, the device lists for $619 to $649.

The PC that fits on your key ring

Company: Route1

Product: MobiKey

Imagine a mobile thin client that is so thin there isn't even a client.



The Palm Treo 700wx adds BlackBerry-like auto-forwarding e-mail to the first Windows-based Treo, as well as built-in EV-DO wireless.

The MobiKey plugs into any PC with a USB port and an Internet connection, providing secure access to your desktop PC.

People like it: Route1 recently announced that two telecom service providers placed orders for 6,000 of these smart USB devices.

The thumb-sized MobiKey drive plugs into a USB port on any available Windows PC with an Internet connection. The software inside launches from onboard ROM, connects to Route1's MobiNet hosted service and loads the logon screen. Users authenticate, using embedded digital certificates, through MobiNet, which then sets up an encrypted SSL tunnel through the corporate firewall. Users have fully protected access to their desktop PC and other authorized computers with the local PC's keyboard, mouse and some protected memory space.

About 100 people use MobiKey at Bell Business Solutions, a Montréal subsidiary of Bell Canada, which does IT consulting for small and midsize enterprises. When they're out of the office they use BlackBerrys for e-mail, but when they need access to desktop and Citrix-based applications, they find a PC in a hotel business center or Internet café, plug in the MobiKey and reach their corporate PC, says James Hickey, a company vice president and committed MobiKey-er. "I see my entire desktop, as if I had turned on my computer at the office," he says.

MobiKey costs $399 per device; the price includes a one-year MobiNet subscription.

Finding Wi-Fi

Company: ZyXel Communications

Product: AG-225H 802.11a/b/g Wi-Fi Finder & USB Adapter (WFUA)

The name is almost as long as the device, which measures 3.8. by 1.1 by 0.6 inches, roughly the size of two fingers side by side.

The WFUA has two uses: It's a USB Wi-Fi adapter that plugs into a laptop or handheld and supports 802.11a, 802.11b and 802.11g radio connections to a hot spot or enterprise WLAN. It's also a standalone WLAN detector: Pull it out of your pocket and switch it on, and it picks up the nearest access points and displays data on each one via an LCD screen. You can hunt for the best connection without having to unpack, boot up and lug around your laptop.

"We use it for verifying wireless coverage and signal strength all over campus, since it also gives a signal strength bar graph for each access point it detects," says Arthur Emerson, network administrator at Mount Saint Mary College, in Newburgh, N.Y.

The high-contrast LCD screen shows information on each access point's Service Set Identifier, encryption requirements, frequency band and channel assignment.

In addition, it works with 5GHz 802.11a WLAN access points and has 802.11a drivers for computers with Version 10.3 and higher of the Macintosh OS X operating system, a rarity according to Emerson. Mac users can use WFUA to connect to 802.11a access points. It takes security seriously, supporting Wi-Fi Protected Access and WPA2.

There are other devices like this, such as the Linksys WUSBF54G Wireless-G USB Adapter with Wi-Fi Finder, which creates an even more awkward acronym, LWWG-UAWF. That product doesn't support 802.11a, however.

Zyxel's list price is $99, but a survey of online sites shows most prices are around $80, with some as low as $60.

nww.com

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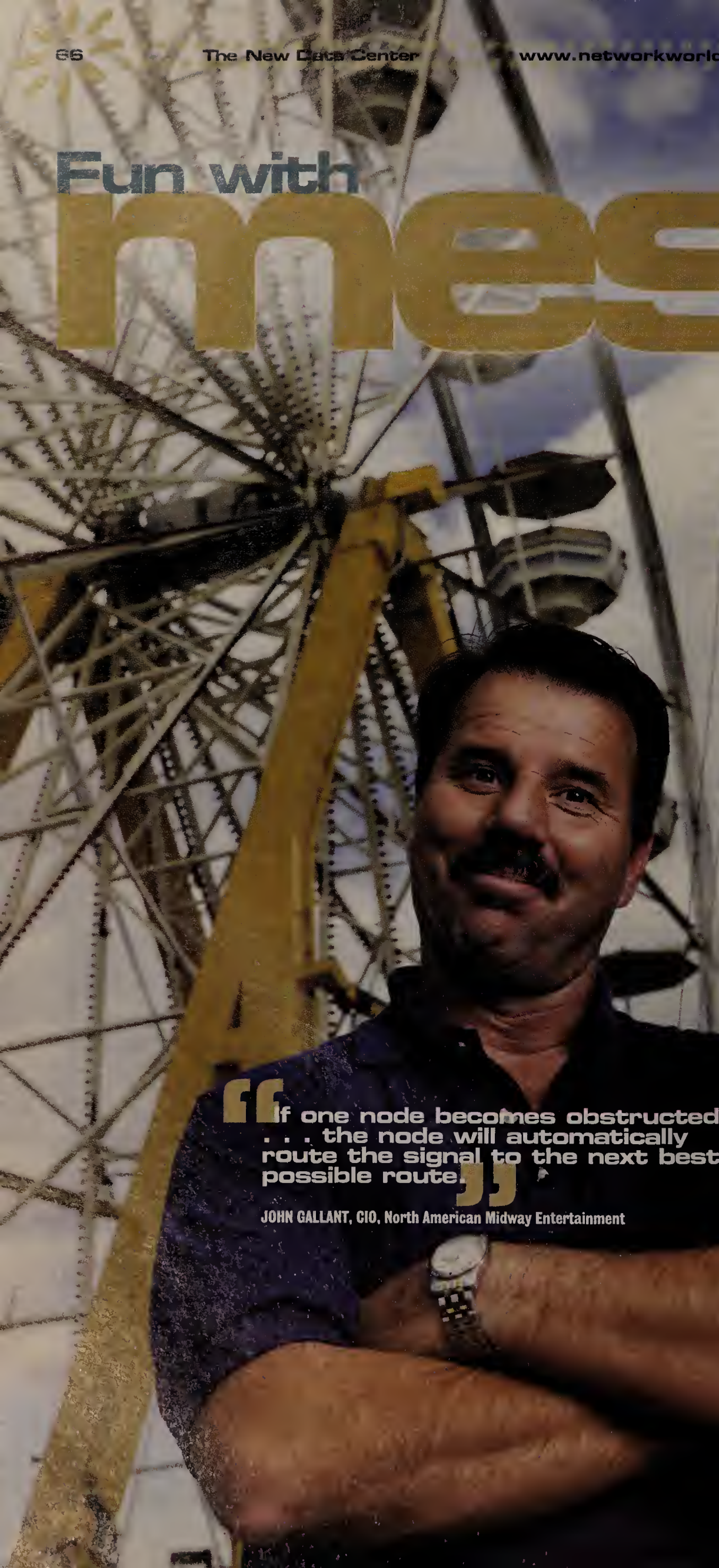
www.nwdocfinder.com/5521

The size of two fingers, this ZyXel device is a Wi-Fi hot-spot finder, and a USB-based 802.11a/b/g WLAN adapter.

Fun with mesh

Spotlight on wireless & mobility



Enterprises give wireless mesh a whirl — and they like the ride.

BY JOANNE CUMMINGS

Not too long ago, enterprises had limited options when it came to making a wireless network part of the New Data Center plan. In the local area, the choice was Wi-Fi — 802.11b, g or a. In the larger campus or metropolitan area, people anticipated widespread WiMAX deployments (aka 802.16d or 802.16e) because of the promise of broadband-level bandwidth, improved flexibility and tight security.

Not so anymore. These days, metropolitan wireless mesh networks threaten to leave WiMAX at the gate. The reasons are numerous: They follow the traditional Wi-Fi standard, so any Wi-Fi-enabled client can work with them, users and analysts say. Plus, they don't require wire runs to every node, they are designed to be self-organizing and -healing, and they scale on the fly. If you need more capacity, add another node, and you've got it.

In addition, mesh gear is available from Cisco, Firetide, Strix Systems, Tropos Networks and others. WiMAX products are not nearly as prevalent. Fixed WiMAX equipment is just coming to market, and mobile WiMAX gear is not expected to arrive much before late 2007.

"I looked at WiMAX in the public safety arena.... It worked great in a stationary environment, especially for video cameras, but once I tried it in a mobile environment, it didn't work," says Peter Collins, CIO for the city of Austin, Texas, which recently deployed a series of wireless meshes using Cisco Aironet 1500 series gear.

That's not to say mesh is always the best choice. For most companies considering deploying in-building wireless networks, the cost equation indicates traditional Wi-Fi is still the way to go — if the wire is there and available for the Wi-Fi access points. But when the infrastructure has not been wired, and running wire would be prohibitively difficult or expensive, mesh makes sense. "Mesh works well, and we're starting to see it in warehouses, loading

docks, logistics, transportation, those kinds of applications. We also see it in large, temporary setups, like outdoor concert venues," says Craig Mathias, principal at the Farpoint Group.

For example, North American Midway Entertainment, a large amusement company in Los Angeles, sets up Firetide wireless mesh networks to support transaction processing for its fairs and carnivals. Firetide's HotPort mesh network gear provides reliable, robust connectivity in a challenging environment, says John Gallant, North American Midway's CIO.

"For us, it's almost impossible to use a conventional wireless network with point-to-point runs and wireless access points," he says. "The Firetide mesh gives us a multipoint setup. We can actually go around corners. If the connection's strongest point is straight in front of you, but every three minutes a huge mechanical device like a ride goes past it for a minute, that creates a lot of delay and latency. With the Firetide gear, if one node becomes obstructed or the network noise level gets too high, the node will automatically route the signal to the next best possible route," he adds.

In mesh networks, users deploy multiple mesh nodes throughout an area, but, unlike in traditional Wi-Fi, only one node has to be connected to a wired network. When a mesh node receives a frame from a Wi-Fi client, it relays the frame from node to node, until the frame reaches the wired node. Each node has a standard Wi-Fi interface, to communicate with clients, and a radio-based backbone link that relays the message across the network.

Mesh vs. WiMAX

	Wireless mesh (Wi-Fi)	WiMAX
Bandwidth	11M or 54Mbps	70M to 100Mbps
Coverage	No limit	No limit
Availability	Now	By year-end 2007

Because the mesh doesn't require wire runs to every node, Gallant can use it in the large spaces he needs to cover. For example, North American Midway recently ran the Canadian National Exhibition in Toronto, where the fairgrounds blanketed about one square mile. Gallant implemented a mesh comprising 42 nodes and access points. It supported 240 users.

Mesh has its downsides, he says, but those are common to all wireless networks — susceptibility to lightning, interference from other devices, power outages. Most problematic is having to plug nodes into standard, 110-volt household receptacles. "They have battery backups in case you lose power, but you do have to plug them in. That's probably the biggest challenge," Gallant says. Still, reliability outweighs the downsides: "Mesh works great," he says.

Proprietary routing standards

A bigger downside for some users is the proprietary nature of each vendor's routing scheme. That means once you decide to buy, you're locked into that vendor. Although the IEEE is working on a standard routing protocol, called 802.11s, it doesn't expect to finish that work until late 2007. Even then, the standard would provide for fairly vanilla multivendor mesh implementations.

This gives some users pause. "Wireless mesh is a little bit out there," says Elliot Zeltzer, global manager for telecommunications security at General Motors in Detroit. "We can't afford any downtime. We're looking for more established, standardized technology."

GM is in the middle of a traditional Wi-Fi rollout across its campus, primarily because the wiring is there and it's a more proven technology, Zeltzer says. If he were to look at a more metropolitan-level rollout, he says he'd favor WiMAX.

"Not speaking specifically to GM, I believe WiMAX has the highest value," Zeltzer says. "It offers huge amounts of bandwidth for fairly low cost and in the end, it could provide total local-carrier bypass," he says. Plus, Zeltzer says, he is leery of mesh security.

Wireless mesh users counter such arguments by saying mesh offers enough coverage, bandwidth and security for today's applications. "Everything's misleading in the world of wireless, and your rate depends on a lot of factors, like distance and interference," Austin's Collins says. "With WiMAX, your rate decreases the farther away you are from the transmitter and receiver. It's all relative. I have a consistent throughput on wireless mesh, and that's more important."

As for security, Farpoint's Mathias, as well as current users, say it's not an issue: "Basic wireless LAN security is really improved to the point where it's very good," he says. "If you can secure a wired network, you can secure a wireless network."

In the end, the proof is in the deployments. Several cities have committed to wireless mesh rollouts, and vendors seem to be ticking off new users weekly. As Mathias says: "The demand ... is a global phenomenon."

Cummings is a freelance writer in North Andover, Mass. She can be reached at jocummings@comcast.net.

NDC insight

Wireless LANs not for all

On closer inspection, the idea behind wireless in the carpeted enterprise becomes a bit shoddy.

BY JULIE BORT

"The one killer application I do see for the carpeted enterprise is voice over Wi-Fi. This would be wireless implemented as a counterpart to the wired network, not a replacement for it."

The wireless LAN unquestionably has proven itself for warehouses, airports — any place where the floor covering is cement, tile, vinyl, even dirt. So far WLAN has not been a big go-to technology for carpeted offices. But this is changing as network executives discover the value of WLANs in places such as boardrooms and waiting rooms — areas that play host to visitors and shifting arrays of devices.

This small step onto the carpet has been followed by a leap into this marketing-driven fantasy: Most office workers already use laptops and PDAs with embedded WLAN adapters. WLANs are becoming super-speedy. The next logical step is making wireless the only LAN connection inside the office and out. Or, in the words of a Cisco Aironet white paper on total cost of ownership, "It is shortsighted to consider wireless as a small, pilot trial without considering the scalability and the TCO benefits across multiple organizations and buildings."

Certainly, a few corporations have discovered the truth in that. After a fast-food giant held a small WLAN trial about five years ago, it rolled out a production network that became wildly popular. Today wireless is the only connection most employees want to use, noted Gary Tomanich, a senior network analyst for the fast-food chain in a recent *Network World* article (www.nwdocfinder.com/5725).

A frayed fabric

For most enterprises, however, WLAN technology is not hardy enough to rival wired Ethernet. For starters, 802.11 implementations are based on shared Ethernet, which requires carrier-sense multiple access with collision detection — a step back from the collision isolation afforded by the wired world's switched networks, users say. Plus, 802.11b/g "accommodates the client with the weakest signal and throughput connection" by sharing the Ethernet at the slowest rate of connection, says Mike Sinno, director of IT infrastructure at Cooper University Hospital in Mount Laurel, N.J. He oversees an 802.11a WLAN comprising 210 Cisco access points and a traditional Ethernet network with a gigabit backbone. Configuring WLANs to allow only higher-speed connections could reduce the coverage area of a network's access points, which means more of them will be needed.

If employees use the LAN only for light applications, such as e-mail or Web surfing, 802.11b/g — and 802.11a — could be fine. If they use latency-sensitive applications or consume bandwidth like potato chips, network executives are going to want to stick with the wires. Bandwidth-hungry medical digital images are a prime example; they're one reason that Sinno says he isn't yanking out the LAN, even though the hospital uses 802.11a.

Even if users go easy on the bandwidth, other technical issues arise as the popularity of wireless grows, says George West, senior analyst at research firm West Technology Research Solutions. He's skeptical that WLANs will become the de facto LAN in the carpeted enterprise, at least over the next few generations of WLAN technology. "What's not really been addressed is the issue of spectrum saturation," he says. If every PC in an enterprise is on a WLAN, as are Wi-Fi phones and other devices, the network will need to support voice and video. This will saturate the WLAN and kill performance, he says.

In this imaginary future, the response would be to bolster the network with compression and other "cooperative, sharing technologies," West says. "If you have to add management services to make it work, that's an inhibitor to the enterprise." It also kills that TCO Cisco wants you to examine.

Still, believers in the carpeted enterprise make convincing counterarguments. Craig Mathias, principal at the Farpoint Group, says those who question shared LAN links should remember that all Ethernet is a shared medium at some point. As for forcing everyone onto the slowest-speed link, he says, "Don't mix 802.11b and g on the same channel. That's just foolish." Plus, he notes, "11a performs well enough for full-fledged enterprise use." He predicts the carpeted enterprise will be the norm within two years. "I've been doing wireless for 15 years and haven't seen any reason why wireless won't become the default LAN for the enterprise," he says.

The right fabric for Vo-Fi

I'm not so sure. While some of the fantasy likely will materialize, I can't see most enterprises yanking out functional, high-speed LANs, only to struggle up a steep learning curve for wireless. The one killer application I do see for the carpeted enterprise is voice over Wi-Fi (Vo-Fi). This would be wireless implemented as a counterpart to the wired network, not a replacement for it.

By 2010, Wi-Fi-enabled phone shipments will hit 22 million worldwide, compared with an estimated 1.8 million this year, West's research shows. Untethering the office phone makes sense in all kinds of situations. Cooper University Hospital is upgrading its WLAN to enable Vo-Fi for nurses, Sinno says. And, sauntering into fantasyland once more, look at the possibilities with Wi-Fi-equipped cell phones — transferring calls from the public network to the free WLAN when they enter WLAN range. Now that's an application that won't pull the rug out from under you. ■

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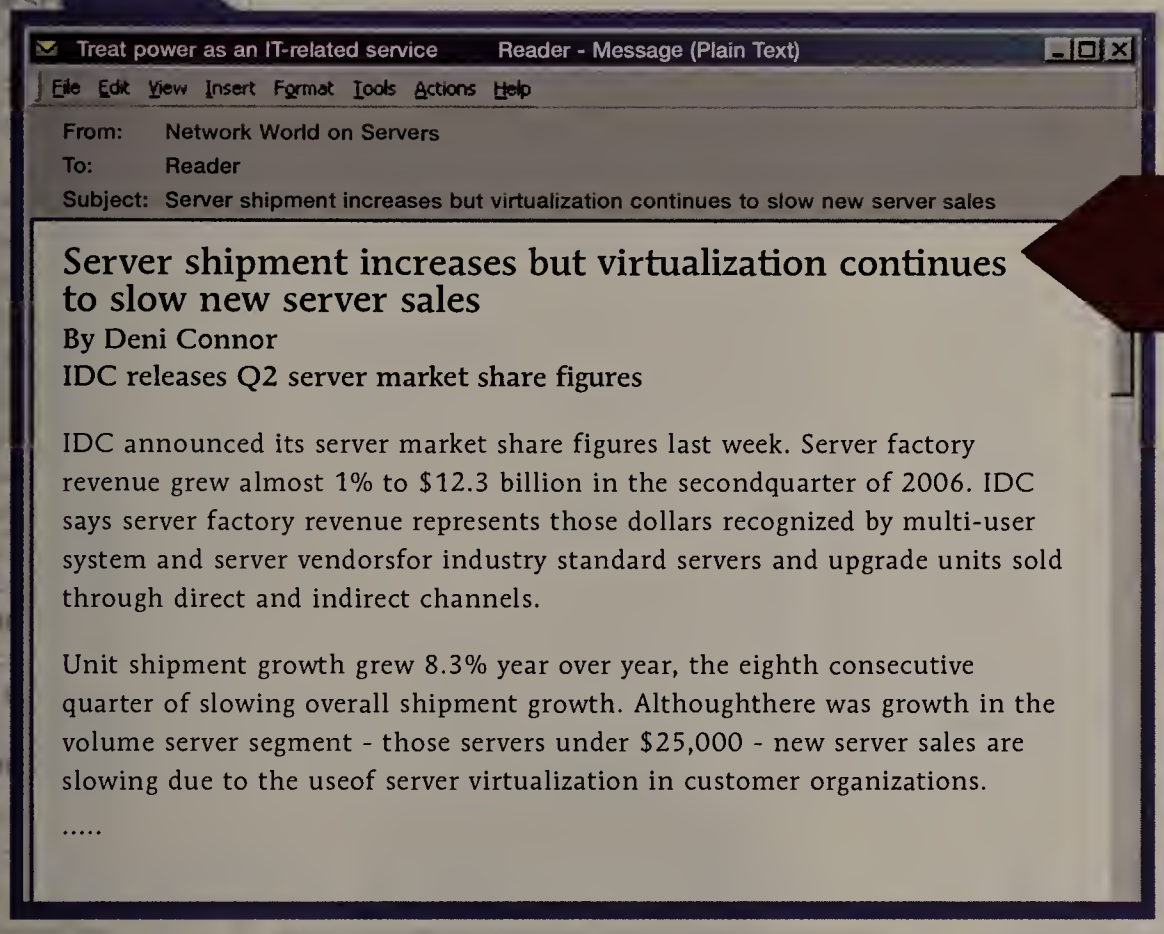
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Server shipment increases but virtualization continues to slow new server sales

By Deni Connor

IDC releases Q2 server market share figures

IDC announced its server market share figures last week. Server factory revenue grew almost 1% to $12.3 billion in the secondquarter of 2006. IDC says server factory revenue represents those dollars recognized by multi-user system and server vendorsfor industry standard servers and upgrade units sold through direct and indirect channels.

Unit shipment growth grew 8.3% year over year, the eighth consecutive quarter of slowing overall shipment growth. Althoughthere was growth in the volume server segment - those servers under $25,000 - new server sales are slowing due to the useof server virtualization in customer organizations.

.....

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_INFRASTRUCTURE LOG

_DAY 28: These slow, inefficient boxes don't have enough power to run my high-end business apps. They don't have enough power to do anything except crash.

_Need sleep. Will try to dream that I am I.T. King of a planet that only produces really powerful servers.

_DAY 30: I've got it: the IBM System x™ with the AMD Opteron™ Processor. It has more power and more efficiency than I ever imagined in a standards-based server. IBM Xcelerated Memory Technology™ can let us access data up to 15 percent faster than other servers for maximized performance.* I can finally sleep in my own bed again.

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How not to get outsourced

As more IT gets delegated to third parties, network execs and staff must adapt to survive.

BY JOANNE CUMMINGS

When Karl Kaiser took over as CIO for the city of Minneapolis, he found a dysfunctional IT organization. The staff was caught up in technology for its own sake, and very few brains or dollars were focused on the business of running the city.

The city was looking for business value, but we in IT were perceived as the techies who run around with screwdrivers and fix machines," he says. "Over 60% of my management energy and budget went to just keeping the infrastructure alive — the break/fix business of installing, maintaining and supporting computers. And that's no way to run an IT shop."

Kaiser decided to outsource, and he did it in a big way. He sold off most of his IT assets to Unisys, which now runs Minneapolis' networks, servers, desktops and help desk. And as part of the deal, the IT staffers responsible for those areas were shifted to Unisys. Although Kaiser bartered for a nice arrangement (Unisys was required to offer affected personnel a job at equal or better salaries and benefits), the staffers, some of whom had 20-year tenures with the city, were no longer a part of the city's IT department. They were outsourced.

"Over 60% of my management energy and budget went to just keeping the infrastructure alive."

–Karl Kaiser
CIO, City of Minneapolis

Who stays

Experts say Minneapolis' situation is becoming more common as IT evolves. According to recent research from Gartner, by 2010 most IT departments will be 30% smaller than they were in 2005, caused in large part by outsourcing. IT is expected to become more business-oriented by 2010, with six of every 10 IT staffers assuming a business-facing role.

"That's the key," says Laurie Orlov, vice president and research director at Forrester Research and author of the recent report "Is There a Career Future in Enterprise IT?" "IT needs to become much smarter about the business they're in, and that knowledge will be the thing that saves them from being outsourced," she says.

The future IT staffer won't be immersed in the back-room break/fix mentality, she says. Those who survive the push to outsourcing will be the ones who understand technology, with all its promise and limitations, but who also can readily see and communicate how technology applies to the business to solve problems.

"We still need specialists, but they're far fewer in number. We're looking more at honing a liberal arts mentality within the IT group," says Brian Young, CIO at Creighton University in Omaha, Neb., which has outsourced both its voice telecommunications and the networks supporting its residence halls.

"We're looking more at honing a liberal arts mentality within the IT group."

–Brian Young
CIO, Creighton University

Kaiser says his remaining IT staffers are all well-rounded and business focused. Four of his staffers are what he terms "service delivery managers," who are charged with monitoring and maintaining the outsourcing relationships. The rest are focused on higher-level IT duties, such as applications, network architecture and business-process redesign.

"Right now, I'm only hiring business analysts and business process reengineering people," he says. "Because for me it's all about the big picture. You need to figure out how the business is being accomplished today, and then if there is a better way of accomplishing that business. And does that better way lend itself to automation or to technology? Those are the people who are in demand."

Orlov agrees. "Companies will outsource the tactical work potentially but not the management of those vendor relationships, not the negotiating of contracts with those vendors, not the application of what the vendors are doing toward the business problems of the company, and most definitely not the suggestion of innovative ways of using technology in the various business groups in the company," she says. "That's where IT will always have a role."

Evolving your skill set to meet the demands of this business-savvy IT future is not that difficult, experts say.

For example, Creighton's Young says that he uses a leadership coach who trains his staff to be more business-savvy. "I'm a huge believer in leadership skills, so everyone here, whether they're a programmer, a Web designer or a sys admin, has the opportunity to go through leadership development," he says. The results have been startling. "Folks here have just blossomed into wonderful leaders who have now taken on projects and project management and moved from an entry role into a midlevel or senior leadership role. It's been a huge benefit to them — and to the university."

Unfortunately, in tight budget times, those programs are usually the first to get cut, he says. "But we really need to rethink that," he says. "That's a short-sighted view of professional development."

Cross-training experience

Others say gaining business expertise doesn't need to be an added expense and can be gained through mentoring or even business-side job rotation. For example, Scott Bright, a researcher at Forrester who works with Orlov, says successful IT staffers of the future will most likely have had zigzag careers, in which they move seamlessly from the IT side to the business side and back again.

"We see people rotating from the business side to IT," he says, noting a recent case in which nurses who had gained expertise in certain systems went to the IT side to help implement and augment those systems. "They had gained expertise through hands-on experience and were able to leverage that experience in IT," he says. "And we also see rotation from IT to the business, providing IT with more depth and knowledge of how the business works through daily interaction and work experience while on the business side."

Bright says the forward-thinking CIO will ensure staffers are trained in the business and that in many cases they will formalize these mentoring and rotation plans. "It should become almost a checkpoint over the course of your IT career, prior to promotions or major moves within IT, that you move into the business to broaden your skill base and understand what the business is doing."

In the end, Kaiser says this view of the future is something IT should embrace, not fear. "You shouldn't view outsourcing as a threat," he says. "Instead, look at it as a challenge. Get yourself in shape to be able to do more business-oriented tasks like manage an outsourcing contract or becoming the company interface to the outsourcer. Those things can never be outsourced."

And they're far more interesting in terms of a career than the typical technology-centric position. "You get to keep an eye on the future and emerging technologies, and you make sure you are abreast of what's happening in the industry," he says. "That way, you become more focused on what you do with technology rather than technology itself."

Cummings is a freelance writer in North Andover, Mass. She can be reached at jocummings@comcast.net.

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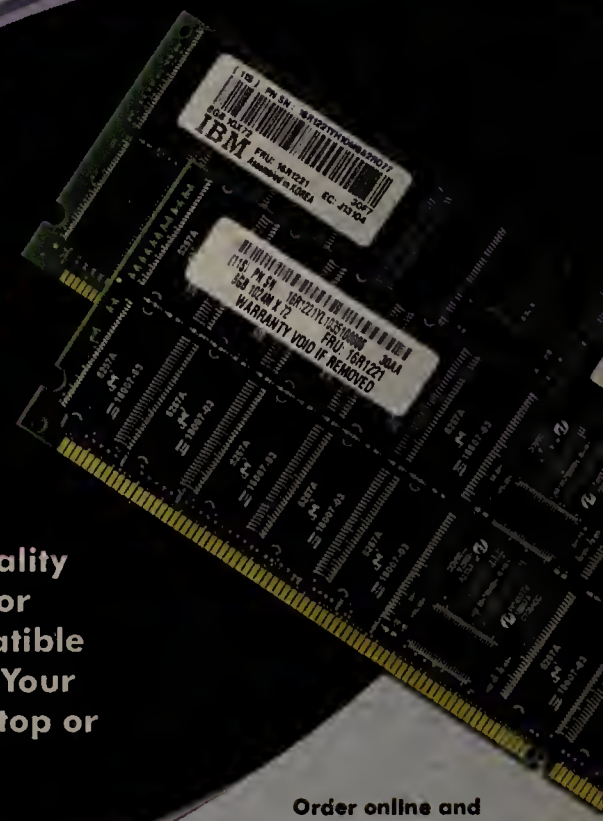

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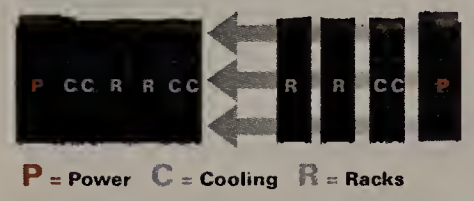

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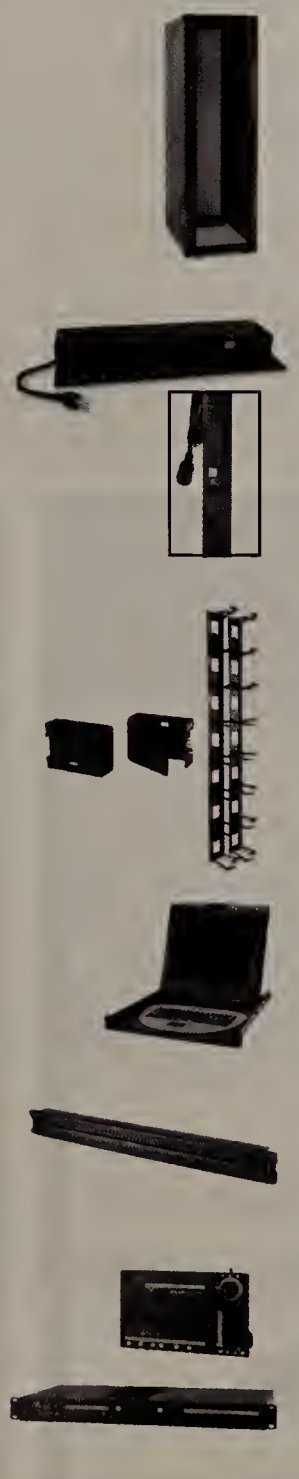

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SonicWall boosts remote-office device with wireless support

BY TIM GREENE

SonicWall plans to introduce a remote-office appliance that eliminates the need for wired connections to the sites where it is deployed.

The TZ 190 supports broadband wireless services from Cingular, Sprint and Verizon (www.nwdocfinder.com/5747), making it possible to use the device in areas where wired broadband connections are unavailable.

In addition, the broadband capability could be used to back up a landline if the wired service fails.

The company says the TZ 190 could be used in retail stores that want to roll out broadband remote access to headquarters. Many chain stores have locations that cannot get wired broadband services, so the wireless option could fill in. And airports might lack wiring to connect retail kiosks to broadband connections for credit card checks, but a broadband wireless service might be available.

The TZ 190 has a PCMCIA slot and software drivers to support broadband wireless cards that are compatible with services offered by such U.S. broadband wireless providers as Cingular, Sprint and Verizon. The device also supports wired WAN connections that fail over to the wireless link. SonicWall has worked with makers of the cards that are compatible with the providers' services, and says the TZ 190 supports those cards.

With a firewall, VPN support, virus screening and intrusion prevention included in the appliance, it competes against branch-office security gateway gear from Cisco, Juniper and WatchGuard, although they lack broadband wireless support.

In addition to the broadband support, the TZ 190 contains an eight-port 10/100 Ethernet switch that can segment traffic into virtual LANs that enforce different security zones. So certain workstations attached to the switch could be restricted to use of the Internet and the office printer but not certain application servers.

The device is based on an upgraded hardware platform compared with previous TZ devices. The processor is a 200MHz Cavium Nitrox, and the box has 128MB of RAM and 16MB of flash memory. This compares with 64MB of RAM and 8MB of flash in the TZ 170 (www.nwdocfinder.com/5748).

The switch is manageable via command-line interface through a console port, and also has a Web interface. TZ 190 costs $1,000. ■

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RFID can help locate that misplaced server, HP says

BY ANN BEDNARZ

Ever find yourself scouring rows of data center racks for a particular device that was retired from its initial function but might be suitable for a new project? There's an easier way to zero in on the location of IT gear, HP says.

Last week the vendor shared details about a system it tested with grocery chain Meijer that uses radio frequency identification (RFID) technology to monitor and track data center assets.

HP's system uses RFID readers and tags to keep tabs on individual servers and network equipment, as well as server and storage enclosures. It monitors when devices are added or removed from racks, and it can provide historical data related to the location of gear.

"We tag each asset in the data center with RFID, and we equip each rack with our custom RFID reader," says Cyril Brignone, R&D project manager at HP Labs. "The reader monitors the rack and all of the assets on a specific rack and reports their location with 1U accuracy."

Even if a router or server isn't being used, it can be detected if it's tagged. "If it is set in a rack, the system will track it — independent of the status of the asset. The asset can be on or off, connected to the network or not connected to the network," Brignone says.

HP Labs developed the technology to help data center managers improve the accuracy of their inventory efforts, increase security and reduce data center auditing costs.

Many data center managers use manual inventory methods to keep track of gear, which can be time consuming and error prone, even when done with barcodes. In addition, many companies conduct a physical inventory only two or three times a year, and the results become outdated quickly, Brignone says.

With HP's RFID tags and readers, racks become self-managing, he says. The readers recognize when devices are moved or added and forward information about the change of status to back-end systems, such as an IT asset management application.

The RFID data adds an extra level of detail to typical asset management applications, which focus on telling data center managers where specific IT gear is deployed in a network and how it is linked to other devices. With asset management software, the emphasis is usually on virtual dependencies, not physical locations, Brignone says. "You don't really know where physically the assets are," he says. "There's kind of a mismatch between the amount of data you have on the virtual side and the amount of data you have on the physical side of things."

With HP's RFID system, companies will be able to fill in those blanks, Brignone says.

HP hasn't yet put a price on its RFID system for data center asset tracking. It created prototypes, but they aren't commercially available. HP Labs just completed its first external test of the technology at Grand Rapids, Mich.-based Meijer, which operates 170 grocery and specialty stores.

HP isn't alone pursuing RFID asset-tracking opportunities. Sun offers similar RFID tools for tracking IT gear. In addition, a number of vendors, such as PanGo Networks, target a broader market for wireless-enabled asset tracking. ■

Lottery

continued from page 10

useful in case the network went down. "There is an option to connect the appliance to a phone line, so if the network goes down, we can still get alerting, and the box won't fail," he says.

Lair's license with Jumpnode, which costs him a bit less than $10,000 for three years, includes an appliance and software hosted by the vendor that performs about 500 checks across his network of managed devices and about 30 servers. "We got more of a product for less money than our two-year maintenance agreement on the software," he says.

He installed the appliance behind the firewall in his network so it can easily access the devices, and the Jumpnode appliance communicates

Jumpnode provides its network monitoring in an appliance, which transmits management information to Jumpnode data centers for analysis and reporting.

back to the Jumpnode data center with management data. Jumpnode also offers agent software that can be installed on servers or other devices that aren't as easily polled via standard methods, such as SNMP. Logging on with a user ID and password, Lair accesses a GUI to view data and statistics, such as bandwidth use across WAN circuits for the past six months, he says.

"We like the fact that it is practically maintenance free, but we would like to see it collect more data from our switches and routers and some other devices, such as our caching server that don't use SNMP," Lair says.

Jumpnode's monitoring appliances come in bundles that range in price from about $1,000 for one year to about $6,000 for three years. The subscription requires a 12-month minimum agreement. ■

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issues. At my current job, the team is local and within earshot and the need is limited."

There are those who not only hold IM at bay, but in contempt.

"IM is just a phone call that gives your fingers cramps," says **Doug Murray.** "When I can coordinate a schedule with someone, I'd rather talk. If I'm in class, church or a meeting, I'm there for a reason and would rather pay attention to that, so e-mail me. That would still be true even if we didn't block IM at work."

"Ah, instant messaging," adds **Bill Dotson.** "The new-age water cooler, where your buddies can find out what you did this weekend without ever having to actually talk to you. Personally, I don't need any more interruptions. If the message is that important, call me or stop by my desk. Professionally, even though we have had a few requests for instant messaging and despite the media hype, I have resisted IM as a legitimate corporate technology. I have yet to see a valid explanation of how this technology would benefit our business. . . . There are lots of intrusive technologies, and IM has to be one of the most intrusive. But riddle me this: If I can reach you anywhere, anytime on your cell phone, or I can send you an e-mail that you can reply to at your leisure, why do I need instant messaging? Sometimes, just maybe, you might want to be unavailable."

We're going to run out of supporters fairly quickly, but here's another.

"I wouldn't call it indispensable; after all e-mail, e-mail delivered to mobile phones/PDAs, SMS text messaging and telephone calls all can accomplish similar functions," says **Fuat Baran.** "However, in a distributed work environment with co-workers scattered around the globe, I find instant messaging to be a very useful tool. It allows you to quickly ping someone and see if they are available; it allows you to quickly send information, such as a URL during a voice conversation; it allows for some back-channel communication during teleconferences (yes, this is a two-edged sword, as it can also be a distraction); and it accommodates idle chitchat with remote friends."

Next up we have a former two-pack-a-day man who's cut down to the occasional smoke at happy hour. "In the past I used IM every day, but it seems I have not used it very much at all in the past year," says **Chris Sloop.** "Maybe once or twice a month nowadays. I could very easily do without it."

Here's another ex-user who's kicked the habit — even though IM dramatically changed his life.

"IM is a nuisance I don't need, but ironically, it is how I courted my wife," says **Derek Rainwater.** "At about the time of AOL's popularity peak ('96-'98), as an entertaining distraction while working for a small software development firm, I developed an entirely online relationship with the young lady who eventually became my wife. After two years, we finally met in person, and our use of IM to communicate was completely eradicated, for obvious reasons. Now, because we're married (five years) with child (2 years), I have neither the time nor need for this particular distraction."

Aw, a happy ending.

There's plenty more from other Brigade members in my blog, www.nwdocfinder.com/5780.

And if you've got something to add, you'll have to send e-mail, needless to say. It's buzz@nww.com.

BACKSPIN Mark Gibbs

The Year of Sleaze?

What is the matter with our industry? It seems every day the sleaze quotient increases!

Last week I blogged some comments that amused me from Shelby Bonnie, the ex-chief executive of CNet Networks, and George Samenuk, the ex-CEO of McAfee, concerning their "regrets" about the stock option backdating scandals they were responsible for (see www.nwdocfinder.com/5750).

In both cases the ex-CEOs acted as if the improprieties were accidents like the printer running out of ink rather than owning up to what must be the truth: that they knew what was going on, because if they didn't know then they would have to be considered totally incompetent as CEOs.

Stock option backdating has been an issue for a long time. Last spring saw the delisting of Mercury Interactive following the resignation of the CEO and two top executives, and in August the CEO and two executives of Comverse Technology were canned and had civil charges filed against them by the Securities and Exchange Commission for exactly this kind of sleazy conniving.

Similar scandals have involved Brocade Communications and Symbol Technologies, and now are starting to surround Apple, Novell and Dell. If you don't understand why stock option backdating is illegal and sleazy you should read "Backdating of Executive Stock Option (ESO) Grants" by Erik Lie of the University of Iowa (www.nwdocfinder.com/5751).

That's all big sleaze. What about the little stuff?

One sleazy thing is a letter from the so-called Domain Registry of America. If you haven't received one when one of your domains is about to expire, you're lucky.

Domain Registry of America combs through the administrative contacts list in every Whois record it can get its hands on (very sleazy) and sends out letters that begin, "As a courtesy [more sleaze] to domain name holders, we are sending you this notification of the domain registrations that are due to expire in the next few months."

Domain Registry of America does make it clear that you will be transferring your registration to it if you use the company to renew your domains, but many people could fail to understand they don't have to use this company. Moreover, the prices it quotes are outrageous: $30 for a one-year renewal and $95 for five years. My registrar, EasyCGI, charges only $10 for one year and $50 for five years!

How about your cell phone bill? I've had several people tell me they've called their cell phone company after finding incorrect charges, and the customer service representative has reversed the items without any complaint.

A suspicious person might think the phone companies do this intentionally, and my experience with Cingular makes me wonder. I changed my son's plan to give him an extra 1,000 text messages per month, which two months later I have discovered hasn't been applied to my bill. The error cost me about $62 extra per month. Now I have to waste time with customer disservice to get this fixed.

And while I'm griping about Cingular, after it acquired AT&T Wireless it did everything it could to get the old AT&T customers to move to Cingular. For example, if you wanted a new phone but your contract hadn't expired, you couldn't get one without transferring to a Cingular plan that usually cost more and or extended your contract period.

Other IT industry sleaze: Spammers come to mind. A lot. And as I wrote about the other day, companies that subscribe you without your permission to their newsletters. The increasing focus on digital rights management, the most useless, anti-consumer technology ever. The government's continuing willful ignorance of computers and networking. The list is a long one.

I'm sure you have your own examples of industry sleaze that I hope you tell me about, but my biggest question is this: Will 2006 be remembered as the Year of Sleaze?

Let it out to backspin@gibbs.com or on Gibbsblog.

Paul McNamara

NETBUZZ News, insights and oddities

IT pros on IM: Indispensable or nuisance?

This exercise started with the assumption that I'm a dinosaur in my steadfast refusal to use instant messaging. E-mail, the phone, shouting and getting off my butt work fine 99.9% of the time and I'm not taking on another distraction to grab that other sliver. So my e-mail question to the *Network World* staff was: "Am I the last holdout . . . or are there others here who still do not IM?"

Turns out dinosaurs are far from extinct. Most of my colleagues do not use IM or use it rarely, with a few reporting that they did IM but do no longer — recovering IMers, if you will. There are hardcore users, but nowhere near what I had suspected. Journalists are an odd lot, however, so I turned to a more reliable gauge, the members of my e-mail list called the Buzzblog Brigade. Is IM indispensable or just a nuisance to these tech professionals?

Last time we posed one of these preposterously loaded questions — "Hypothetical Death Match: E-mail vs. the Web" (www.nwdocfinder.com/5779) — it produced a lopsided response, as e-mail kicked the Web's sorry butt all over cyberspace. This time around it's e-mail's first cousin that's in for the paddling.

Out of courtesy, though, we'll begin with an IMer, albeit one with a familiar beef.

"IM is somewhat indispensable to me," says **Jason Thomas.** "It can be annoying at times, but it is always cool to get a quick hit/feedback/comment from a colleague. Additionally, it is a good way to stay in touch with folks you don't see that often. Granted, it will never replace a phone call or personal visit. There are things that can only be conducted by phone or in person, and for that IM is just no substitute."

"My major complaint with all of the various IM services is their interconnectedness — or incredible lack thereof. I have accounts on all the major IM platforms — MSN, AIM, Yahoo, ICQ and Gtalk. Now, I use Gaim to use all clients from one application. I also have a separate Skype application. Of course, Skype is the outlier, but you would think the other services would be interoperable — especially given that this technology is now quite mature. I also realize using an open source app like Gaim probably limits some of my functionality in some cases — file transfers being one of them. Nonetheless, it is a fair trade-off to get one client as opposed to four."

Peer pressure drove our next respondent to dabble in IM, but it wasn't enough to get him hooked.

"The only reason I used IM is that my fellow sysadmin talked me into it," says **John Gog.** "With all our other means of getting hold of one another, we dropped it. As a social tool for the home user, I suppose it works well; my son uses it a good bit. But even he jumps to e-mail or the phone more than he uses IM. . . . IM has become such a breeding ground for sending Trojans and links to places that will give you Trojans, adware and spyware, that it's become more risky than e-mail. In the workplace, it's just another distraction and, I suspect, seldom gets used for business purposes. Of course, since no one around here uses it for business purposes (officially), I can't say that as an absolute, but I'd be willing to bet I'm not far wrong."

One's view depends on the demands of one's job, naturally.

"I do technical support and remote installation by IM using ICQ with links to AIM, qhz, abc and every other darn IM system that matters. Some of it is very critical, time dependent or just urgent. I find IM indispensable," says **Brandon Sussman.** "In more humanistic endeavors, I would not consider using IM as it is a nuisance. I do not chat online. Ever."

"It depends on the organization," agrees **Greg Martin.** "I was part of a large outsourcing company. We weren't all on-site and my team used IM to stay in constant touch throughout the day. The back-channel conversations during conference calls helped us get to completion on the

See Net Buzz, page 81

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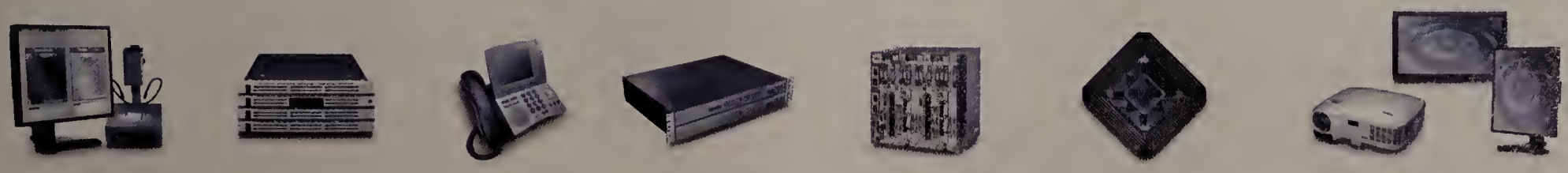

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